ORDER NO. AD8905140C8

Service Manual

Amplifier

Stereo Integrated Amplifier

SU-V460

Color

(S)...Silver Type (K)...Black Type

Area

Country Code	Area	Color
(E), (E5)	Continental Europe	(K) (S)
(EB)	Great Britain	(K) (S)
(EG)	F.R. Germany & Italy	(K) (S)
(G)	Third Region	(K)
(GC)	Saudi Arabia	(K)
(GN)	Oceania	(K)

SPECIFICATIONS
(DIN 45 500)

■ AMPLIFIER SECTION

20 Hz~20 kHz continuous power output
both channels driven 2 × 45 W (8 Ω)
1 kHz continuous power output
both channels driven (THD: 1%) 2 × 60 W (8 Ω)
2 × 85 W (4 Ω)
63 Hz~12.5 kHz continuous power output
both channels driven (0.7%) 2 × 55 W (8 Ω)
2 × 75 W (4 Ω)
Total harmonic distortion (Power Amp Direct input)
rated power at 20 Hz~20 kHz 0.005 % (8 Ω)
rated power at 1 kHz 0.0009 % (8 Ω)
0.002 % (4 Ω)
half power at 20 Hz~20 kHz 0.005 % (8 Ω)
half power at 1 kHz 0.0009 % (8 Ω)
0.002 % (4 Ω)
Intermodulation distortion
rated power at 50 Hz: 7 kHz = 4:1, SMPTE, 8 Ω 0.007 %
Residual hum and noise 0.2 mV
Damping factor 60 (8 Ω), 30 (4 Ω)
Headphones output level and impedance 540 mV/330 Ω
Load impedance
A or B 4 Ω~16 Ω
A and B 8 Ω~16 Ω
Input sensitivity and impedance
PHONO MM 2.5 mV/47 kΩ
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 150 mV/22 kΩ
POWER AMP DIRECT 1 V/18 kΩ
Phono maximum input voltage (IHF '66, 1 kHz, RMS)
MM 150 mV
S/N
rated power (4 Ω)
PHONO MM 76 dB (IHF '66: 81 dB)
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT
97 dB (IHF '66: 100 dB)
POWER AMP DIRECT 106 dB (IHF '66: 115 dB)
−26 dB power (4 Ω)
PHONO MM 75 dB
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 84 dB
50 mW power (4 Ω)
PHONO MM 75 dB
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 78 dB
Frequency response
PHONO RIAA standard curve
±0.8 dB (30 Hz~15 kHz)
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT
3 Hz~100 kHz (−3 dB)
+0 dB, −0.2 dB (20 Hz~20 kHz)
POWER AMP DIRECT 2 Hz~120 kHz (−3 dB)
+0 dB, −0.2 dB (20 Hz~20 kHz)
Tone controls
BASS 50 Hz, +10 dB, −10 dB
TREBLE 20 kHz, +10 dB, −10 dB
Loudness control (volume at −30 dB) 50 Hz, +9 dB
Output voltage
TAPE 1, TAPE 2/DAT REC OUT 150 mV
Channel balance, AUX 250 Hz~6,300 Hz ±1 dB
Channel separation, AUX 1 kHz 50 dB

■ GENERAL

Power consumption 450 W
Power Supply
For Great Britain and Oceania AC 50 Hz/60 Hz, 240 V
For Continental Europe AC 50 Hz/60 Hz, 220 V
For others AC 50 Hz/60 Hz, 110 V/127 V/220 V/240 V
Dimensions (W × H × D) 430 × 125 × 320 mm
(16-15/16" × 4-15/16" × 12-5/8")
Weight 8.0 kg (17.6 lb.)

Notes:
1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

Technics

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Central P.O. Box 288, Osaka 530-91, Japan

SU-V460

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■ BEFORE REPAIR AND ADJUSTMENT

(1) Turn off the power supply. Using a 10Ω, 10W resistor, shortcircuit both ends of power supply capacitors (C705,C706)in order to discharge the voltage.

(2) Before turning on the power switch of the unit.

A. Connect the voltage controller to the primary side.

B. Connect the AC ampere meter to the primary side or connect the DC voltage meter to the "±B" circuit of the secondary side.

C. Turn the VR of ICQ (VR451 and VR452) to minimum (counterclockwise).

D. After setting the output to zero of the voltage contoller,turn on the power switch of the unit.
And increase the output of voltage controller gradually.
Then, check carefully whether the current value of primary side become more than following value or whether the DC voltage of secondary side is increasing slowly.

E. If the value of current is increasing unusually or the DC voltage is not increasing,lower the output level of voltage contoller immediately.

- The current value of the primary side at no signal. (Confirm the power supply voltage of each area and provided voltage of the unit.)

Power supply voltage		AC 110 V	AC 120 V	AC 220 V	AC 240 V
Consumed current	50 Hz	120~480 mA	110~441 mA	60~240 mA	55~220 mA
	60 Hz	114~456 mA	104~417 mA	56~227 mA	52~208 mA

■ PROTECTION CIRCUITRY

The protection circuitry of the amplifier may have operated if either of the following conditions is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted" , or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlined below:
1.Turn off the power.
2.Determine the cause of the problem and correctit.
3.Turn on the power once again.

Note:
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

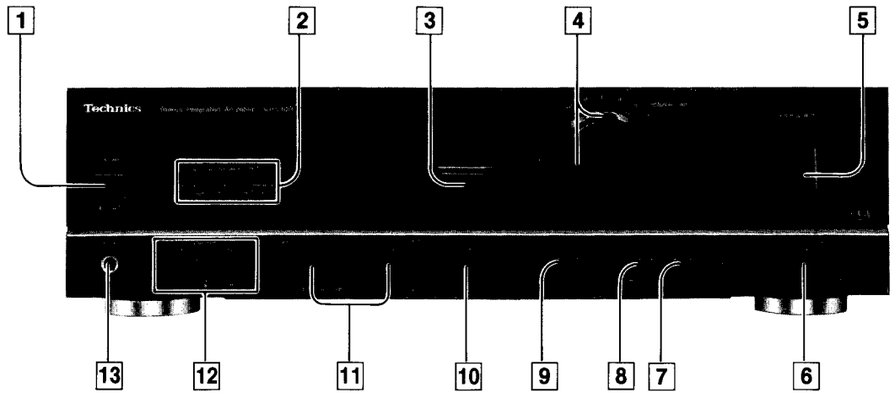
■ ACCESSORIES

•AC power supply cord 1
(SFDAC05E03) ..... For (E), (E5) and (EG) areas.
(SJA193) ..... For (EB) area only.
(RJA0004) ..... For (GC) area only.
(SJA173) ..... For (GN) area only.

•AC plug adaptor 1
(SJP9215) ..... For (GC) area only.

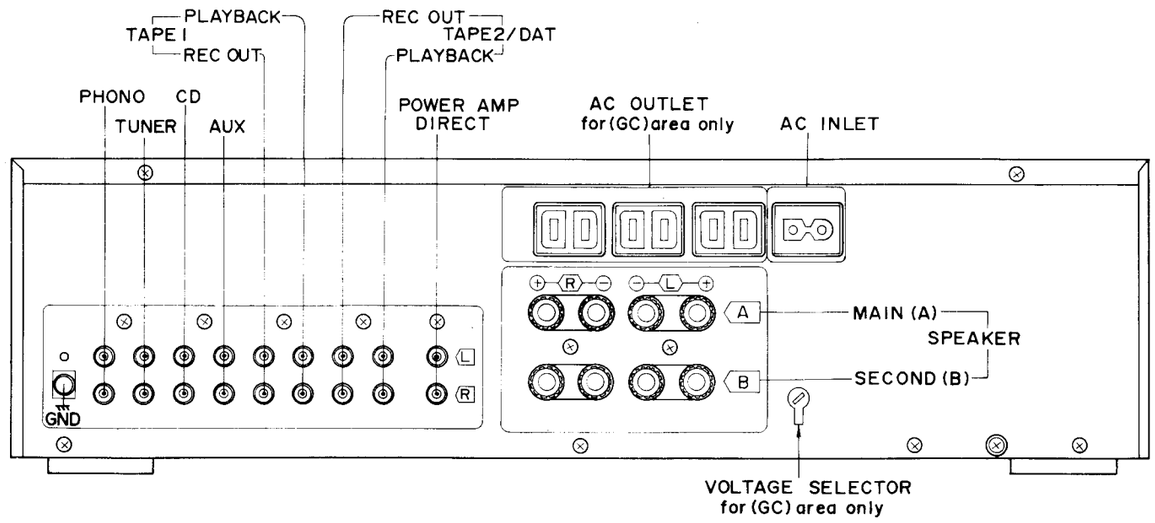
■ LOCATION OF CONTROLS

●Front Panel



1 **Power switch (power)**
2 **Operation indicators (amplifier operation monitor)**
3 **Power amplifier direct switch (power amp direct)**
4 **Volume control/indicator (volume)**
5 **Input selector (input selector)**
6 **Recording output selector (rec selector)**
7 **Mode selector (mode)**
8 **Loudness switch (loudness)**
9 **Tone control switch (tone control)**
10 **Balance control (balance)**
11 **Tone controls (bass/treble)**
12 **Speaker selectors (speakers)**
13 **Headphones jack (phones)**

●Rear Panel

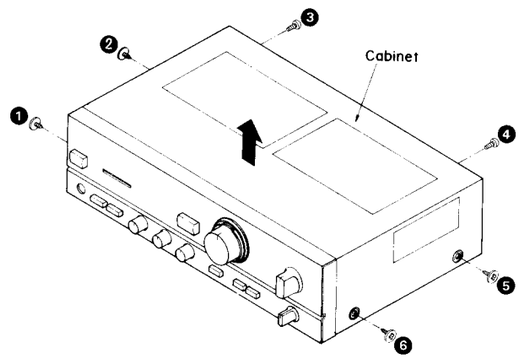


*Phono input capacitance is about 270 pF for EG area (about 100 pF for other areas).

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1 — **Removal of the cabinet**

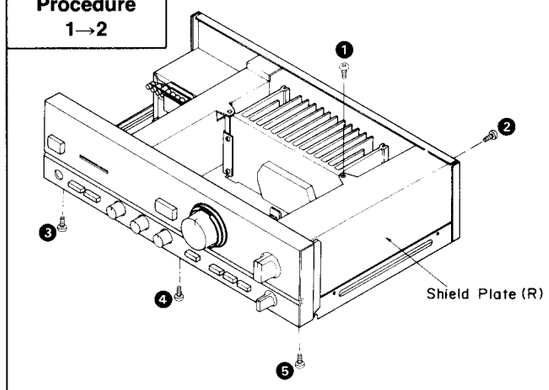
Procedure 1



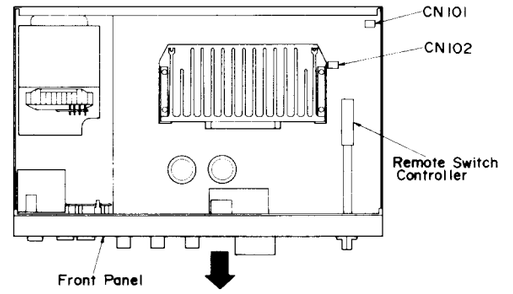
●Remove the 6 screws (❶~❻).

Ref. No. 2 — **Removal of the front panel**

Procedure 1→2



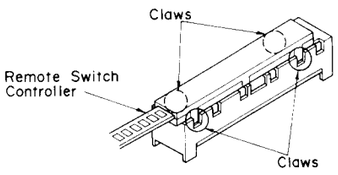
1. Remove the 2 screws (❶, ❷).
2. Remove the shield plate (R).
3. Remove the 3 screws (❸~❺).



4. Remove the 2 connectors (CN101, CN102).
5. Remove the remote switch controller.
6. Remove the front panel in the direction of the arrow.

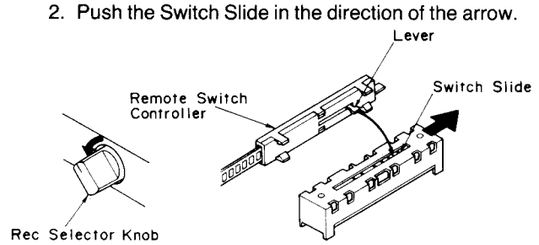
■ Removal of the remote switch controller

●Remove the 4 claws.



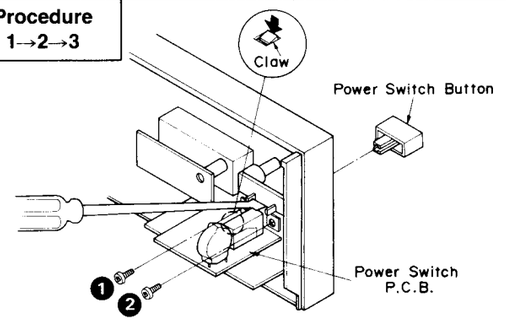
■ Replacing of the remote switch controller

1. Fully rotate the Recording Selector Control counterclockwise.
2. Push the Switch Slide in the direction of the arrow.



Ref. No. 3 — **Removal of the power switch P.C.B.**

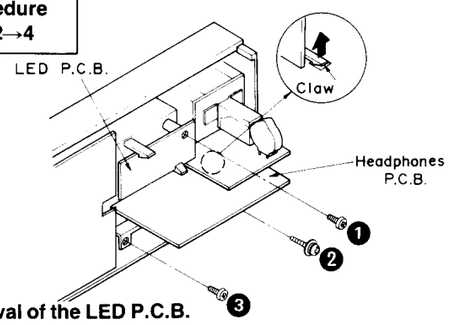
Procedure 1→2→3



1. Remove the power switch button by pushing it from behind the front panel.
2. Remove the 2 screws (❶, ❷).
3. Release the 1 claw.

Ref. No. 4 — **Removal of the LED P.C.B. and headphones P.C.B.**

Procedure 1→2→4



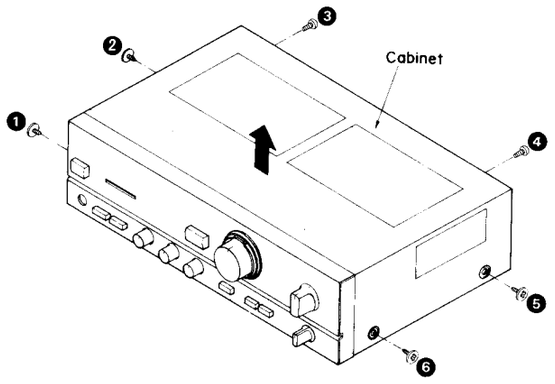
Removal of the LED P.C.B.
1. Remove the 1 screw (❶).
2. Release the 2 claws.

Removal of the headphones P.C.B.
1. Remove the 2 screws (❷, ❸).
2. Release the 1 claw.

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1 — Removal of the cabinet

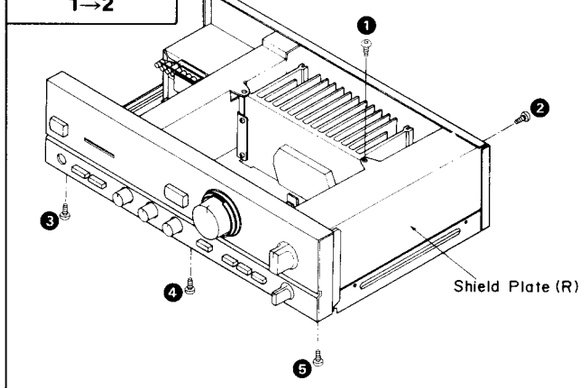
Procedure 1



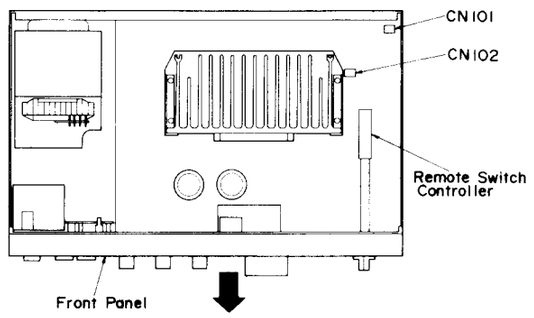
•Remove the 6 screws (❶~❻).

Ref. No. 2 — Removal of the front panel

Procedure 1→2



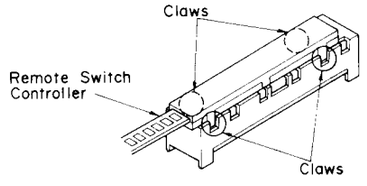
1. Remove the 2 screws (❶, ❷).
2. Remove the shield plate (R).
3. Remove the 3 screws (❸~❺).



4. Remove the 2 connectors (CN101, CN102).
5. Remove the remote switch controller.
6. Remove the front panel in the direction of the arrow.

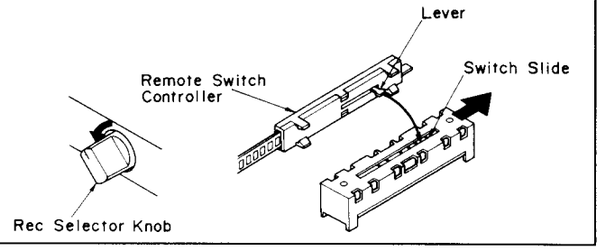
■ Removal of the remote switch controller

•Remove the 4 claws.



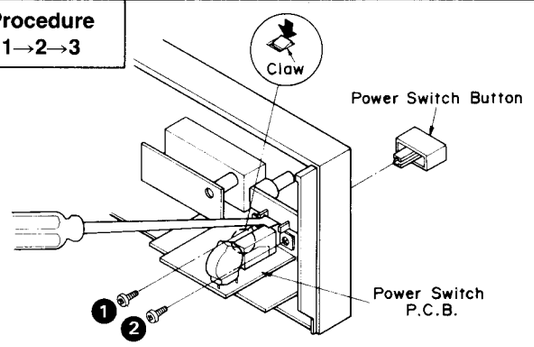
■ Replacing of the remote switch controller

1. Fully rotate the Recording Selector Control counterclockwise.
2. Push the Switch Slide in the direction of the arrow.



Ref. No. 3 — Removal of the power switch P.C.B.

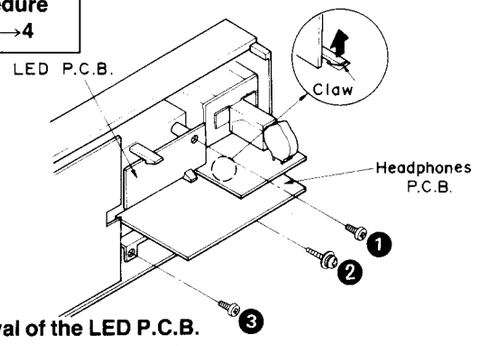
Procedure 1→2→3



1. Remove the power switch button by pushing it from behind the front panel.
2. Remove the 2 screws (❶, ❷).
3. Release the 1 claw.

Ref. No. 4 — Removal of the LED P.C.B. and headphones P.C.B.

Procedure 1→2→4



Removal of the LED P.C.B.

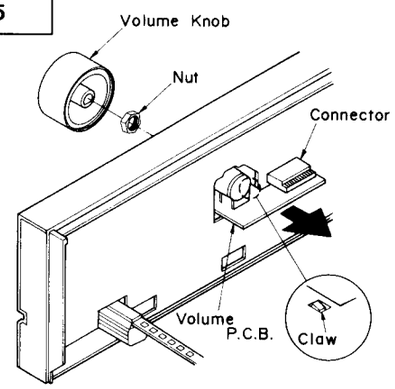
1. Remove the 1 screw (❶).
2. Release the 2 claws.

Removal of the headphones P.C.B.

1. Remove the 2 screws (❷, ❸).
2. Release the 1 claw.

Ref. No. 5 — Removal of the volume P.C.B.

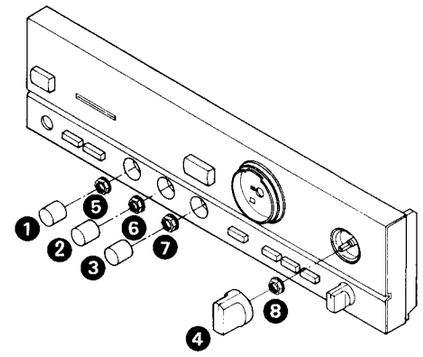
Procedure 1→2→5



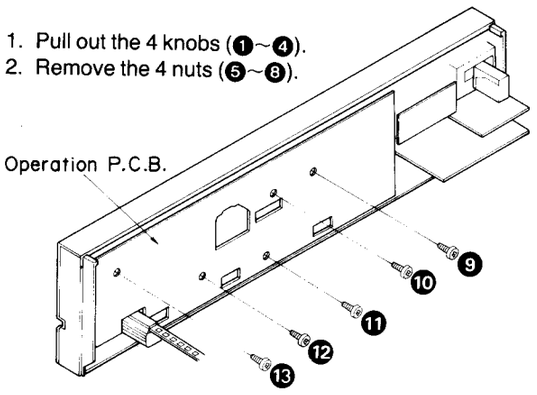
1. Pull out the volume knob.
2. Remove the nut.
3. Release the 1 claw.

Ref. No. 6 — Removal of the operation P.C.B.

Procedure 1→2→5→6



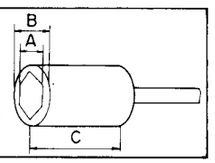
1. Pull out the 4 knobs (❶~❹).
2. Remove the 4 nuts (❺~❽).



3. Remove the 5 screws (❾~⓭).

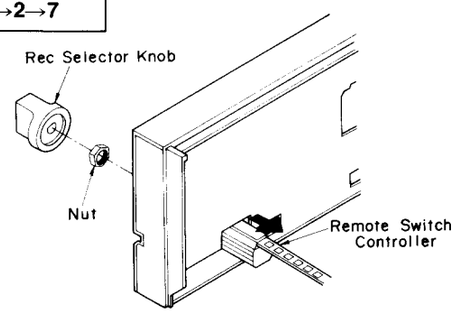
•Use a wrench of the dimensions shown in the illustration above to remove nuts.

A: 11 mm
B: 16 mm
C: longer than 22 mm



Ref. No. 7 — Removal of the remote switch controller

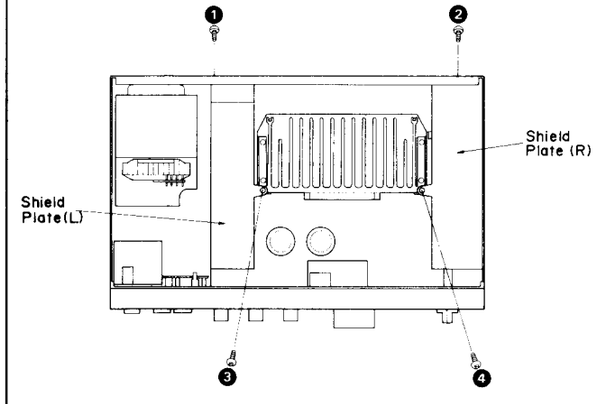
Procedure 1→2→7



1. Pull out the rec selector knob.
2. Remove the nut.
3. Remove the remote switch controller in the direction of the arrow.

Ref. No. 8 — Removal of the shield plate (L) and shield plate (R)

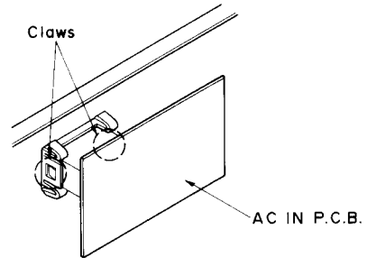
Procedure 1→8



•Remove the 4 screws (❶~❹).

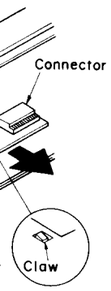
Ref. No. 9 — Removal of the AC IN P.C.B.

Procedure 1→9



•Release the 2 claws.

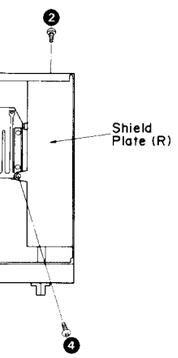
olume P.C.B.



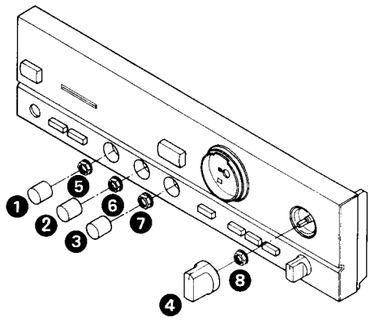
emote switch

in the direction of the

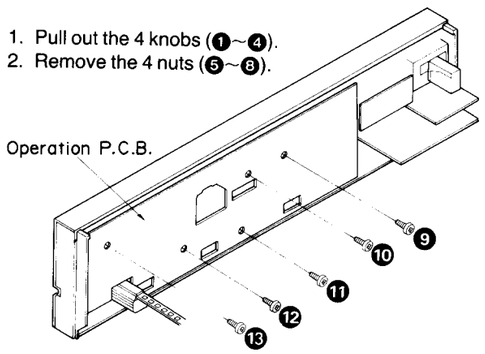
ield plate (L) and



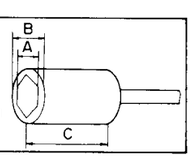
Ref. No. 6	Removal of the operation P.C.B.
Procedure 1→2→5→6	



1. Pull out the 4 knobs (❶~❹).
2. Remove the 4 nuts (❺~❽).

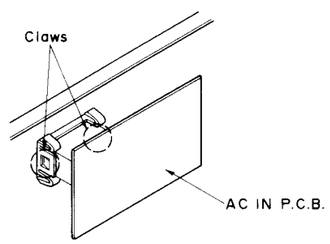


3. Remove the 5 screws (❾~⓭).



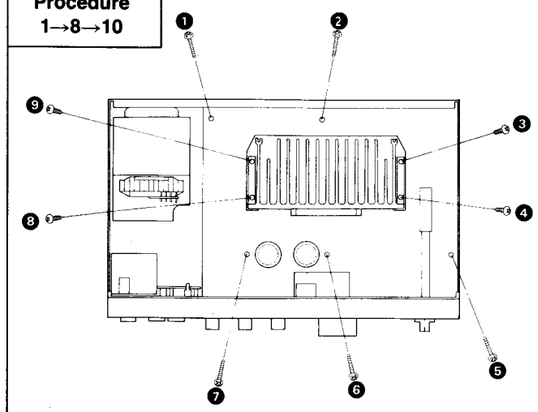
- Use a wrench of the dimensions shown in the illustration above to remove nuts.
  A: 11 mm
  B: 16 mm
  C: longer than 22 mm

Ref. No. 9	Removal of the AC IN P.C.B.
Procedure 1→9	

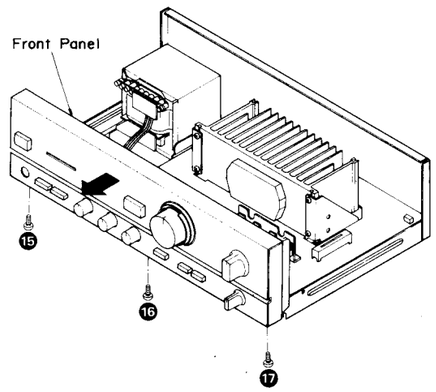


- Release the 2 claws.

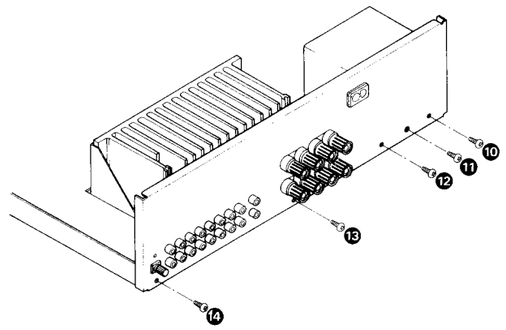
Ref. No. 10	Checking of the main P.C.B.
Procedure 1→8→10	



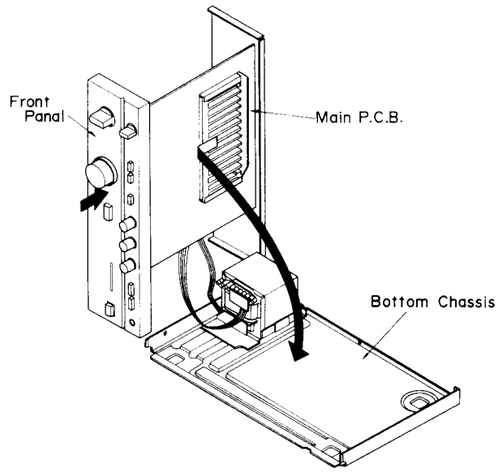
1. Remove the 9 screws (❶~❾).



3. Remove the 3 screws (⓯~⓱).
4. Remove the front panel.



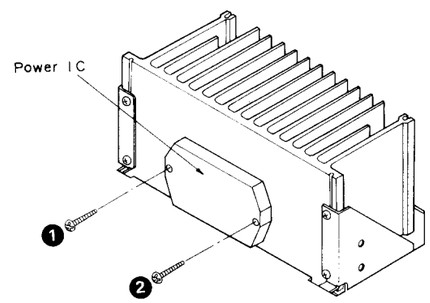
2. Remove the 5 screws (⓾~⓮).



5. Remove the bottom chassis in the direction of the arrow Ⓐ.
6. Reinstall the front panel to the main P.C.B.

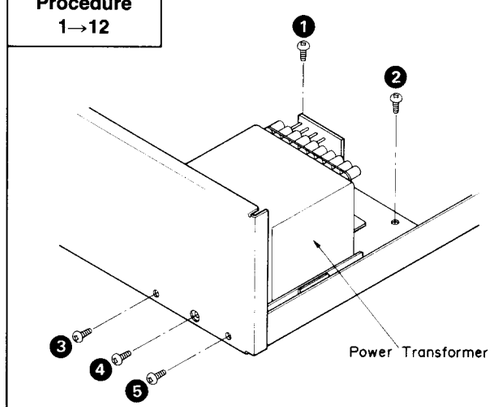
Ref. No. 11	Removal of the power IC
Procedure 1→8→10→11	

1. Unsolder the power IC.
2. Remove the 2 screws (❶, ❷).



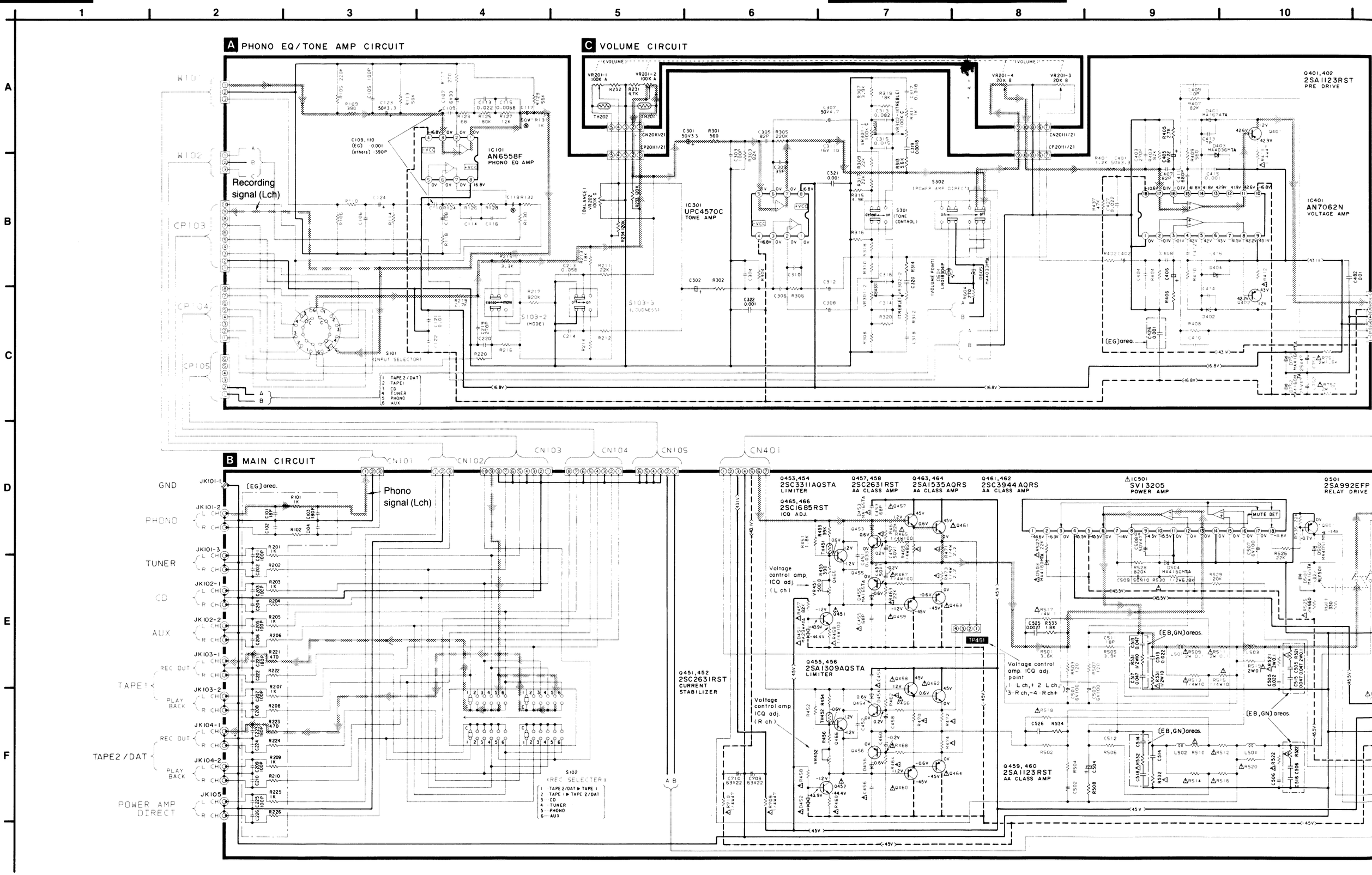
- When mounting the power IC, apply silicon thermal compound (SZZ0L15 or equivalent) to the rear of the power IC.

Ref. No. 12	Removal of the power transformer
Procedure 1→12	



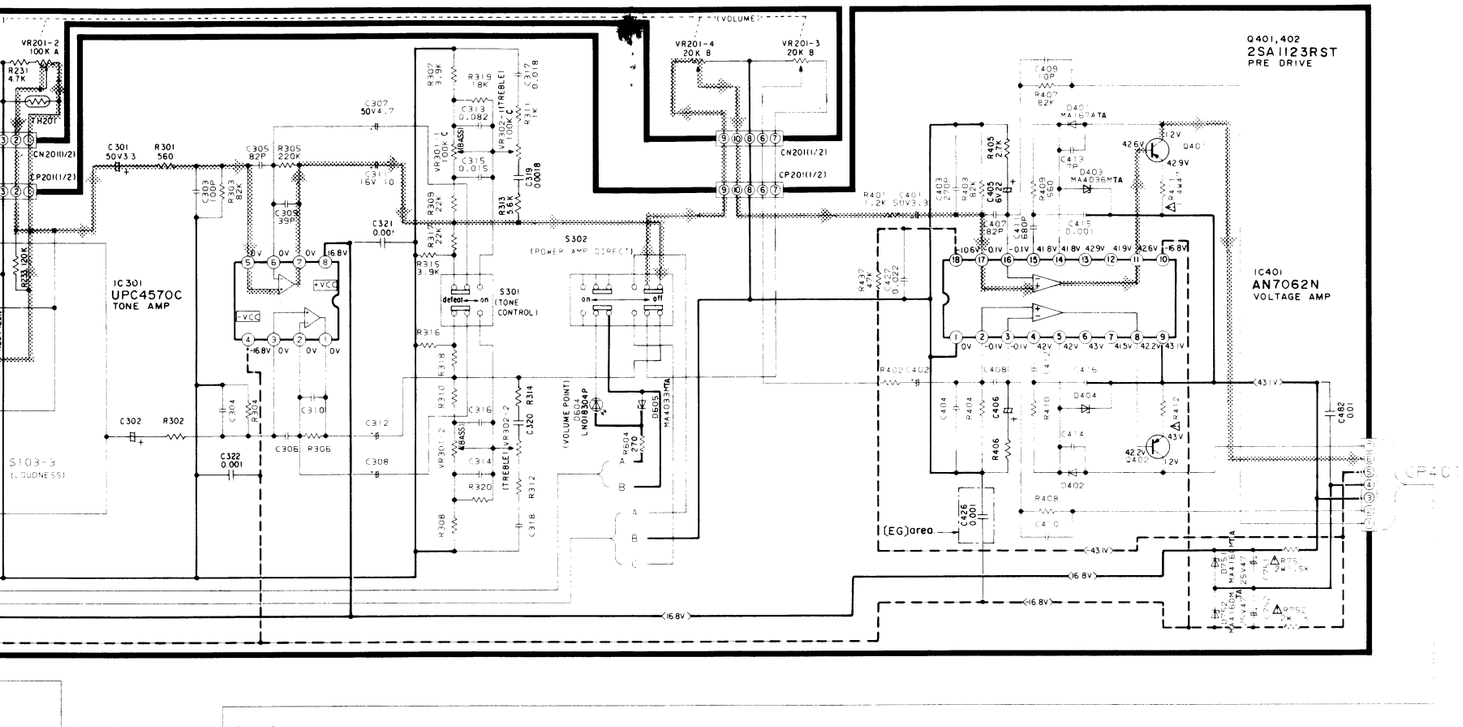
- Remove the 5 screws (❶~❺).

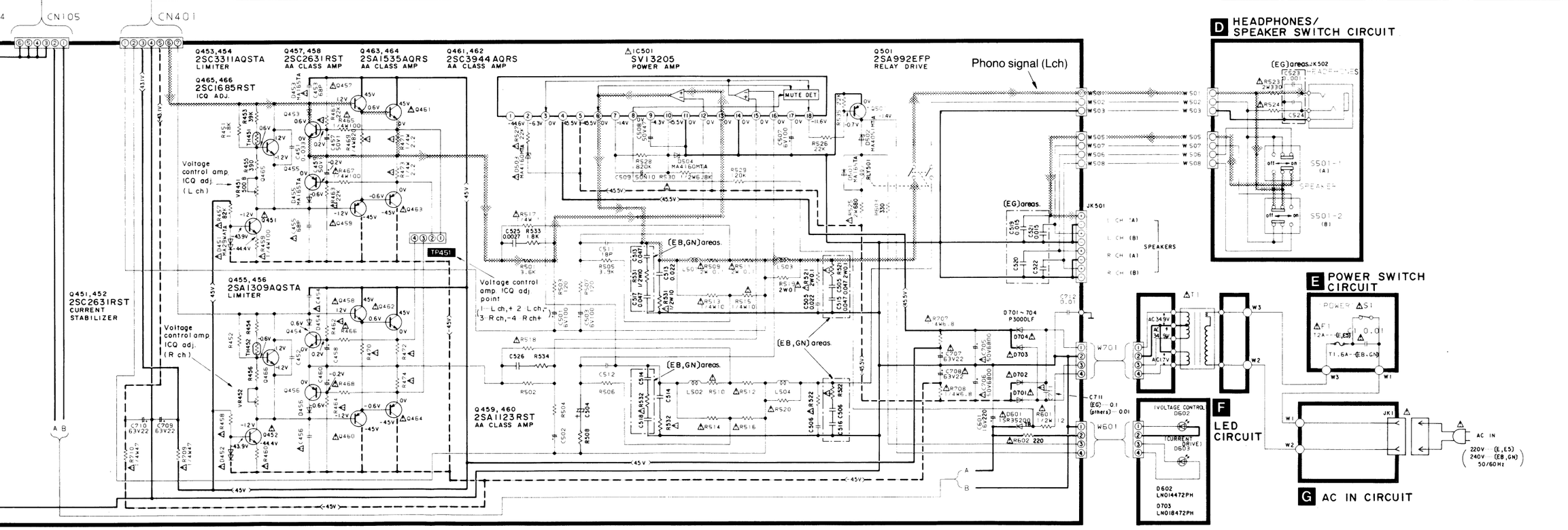
SU-V460 SU-V460

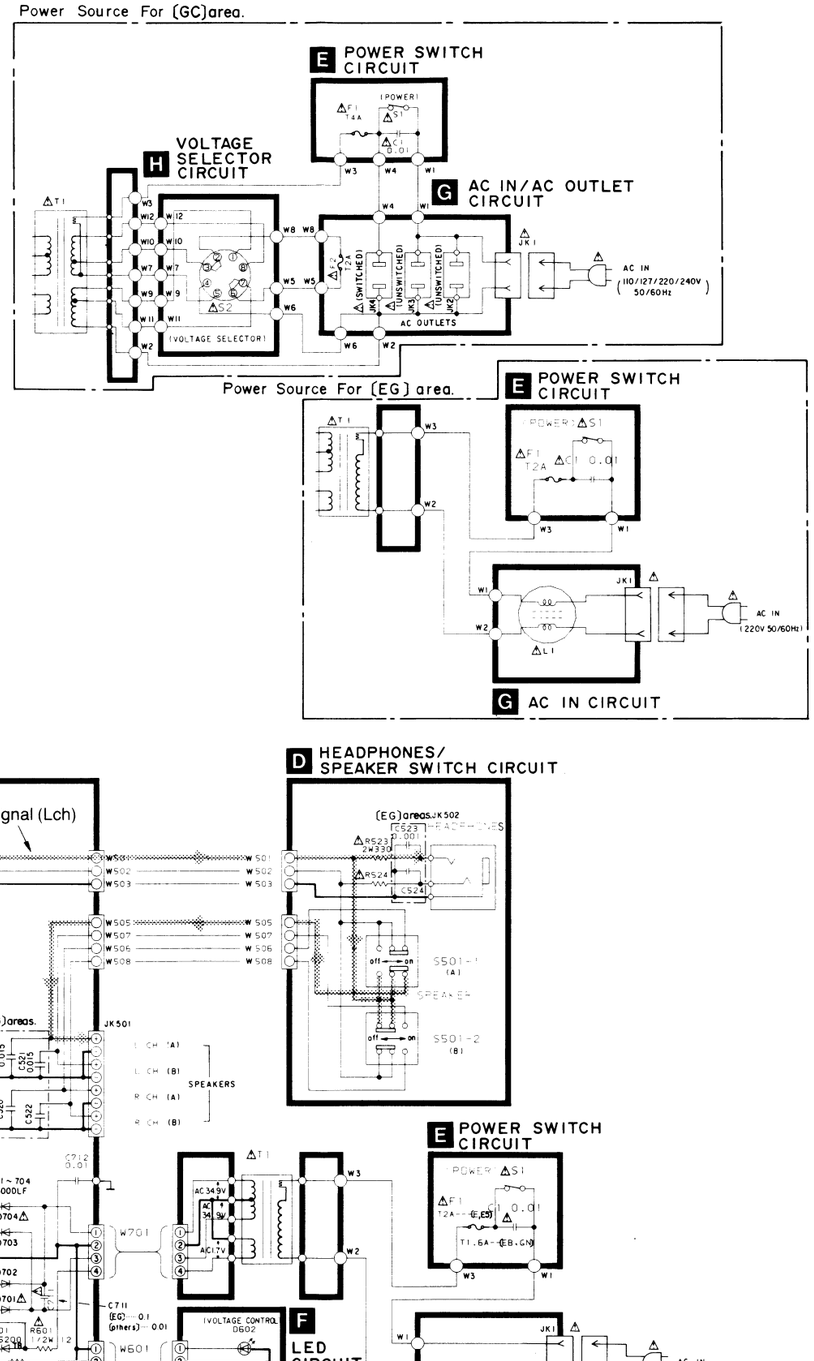


6 7 8 9 10 11 12 13 14 15

ME CIRCUIT







■ SCHEM

(Parts list on p

(This schematic diagra
development of new t

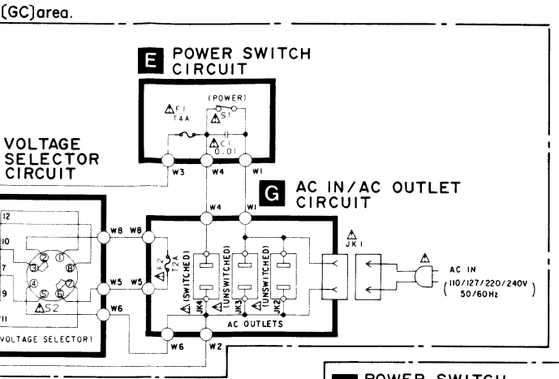
Notes:

- **S1** : Power sw
- **S2** : Voltage s for (GC) a
- **S101** : Input sele
- **S102** : Recordin **DAT▶1"**
- **S103-2** : Mode sel
- **S103-3** : Loudness
- **S301** : Tone con
- **S302** : Power am
- **S501-1** : Speaker
- **S501-2** : Speaker
- : Positive v
- : Negative
- : Phono Si
- : Recordin

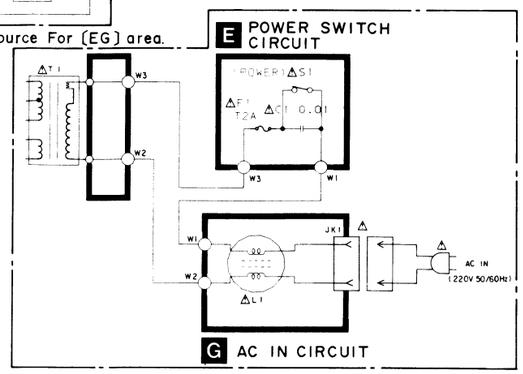
- Indicated voltage va measured by the DC the chassis taken as errors in the voltage of the DC circuit test
- Important safety not Components identifi important for safety. only manufacturer's
- ***Caution!**
  IC and LSI are sens Secondary trouble
  *Cover the parts box
  *Ground the solderin
  *Put a conductive m
  *Do not touch the le

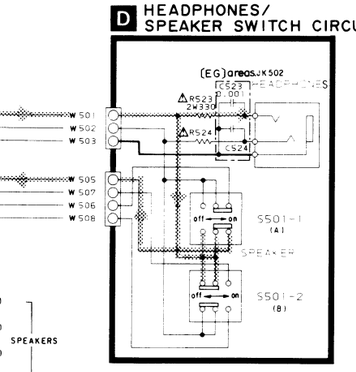
12 13 14 15 16 17

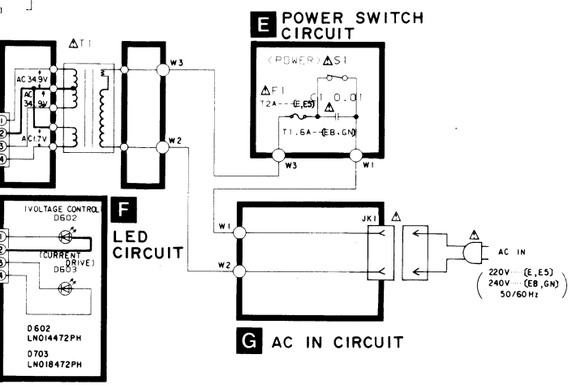
(GC) area.



Power Source For (EG) area.







■ SCHEMATIC DIAGRAM

(Parts list on page 18~21)

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

- ●**S1** : Power switch in **"on"** position.
- ●**S2** : Voltage selector switch in **"220 V"** position. for (GC) area only.
- ●**S101** : Input selector switch in **"phono"** position.
- ●**S102** : Recording output selector switch in **"tape 2/ DAT▶1"** position.
- ●**S103-2** : Mode selector switch in **"stereo"** position.
- ●**S103-3** : Loudness switch in **"off"** position.
- ●**S301** : Tone control switch in **"defeat"** position.
- ●**S302** : Power amplifier direct switch in **"off"** position.
- ●**S501-1** : Speaker **(A)** selector switch in **"on"** position.
- ●**S501-2** : Speaker **(B)** selector switch in **"off"** position.
- —≺ ≻— : Positive voltage lines.
- ---≺ ≻-- : Negative voltage lines.
- ▒▒▒ : Phono Signal (Lch)
- ▒▒▒ : Recording Signal

●Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

*Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care furing repair.

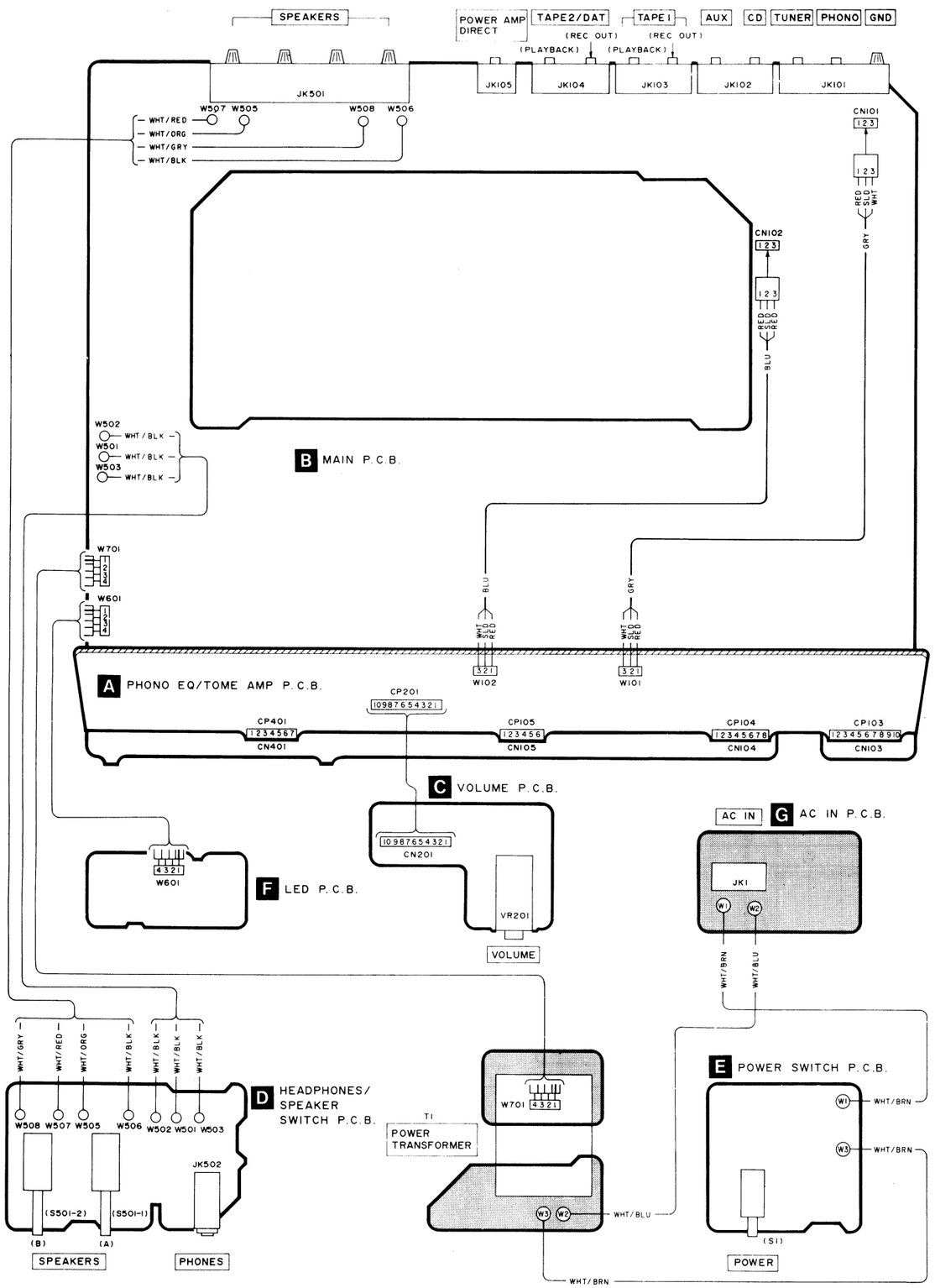
*Cover the parts boxes made of plastics with aluminum foil.

*Ground the soldering iron.

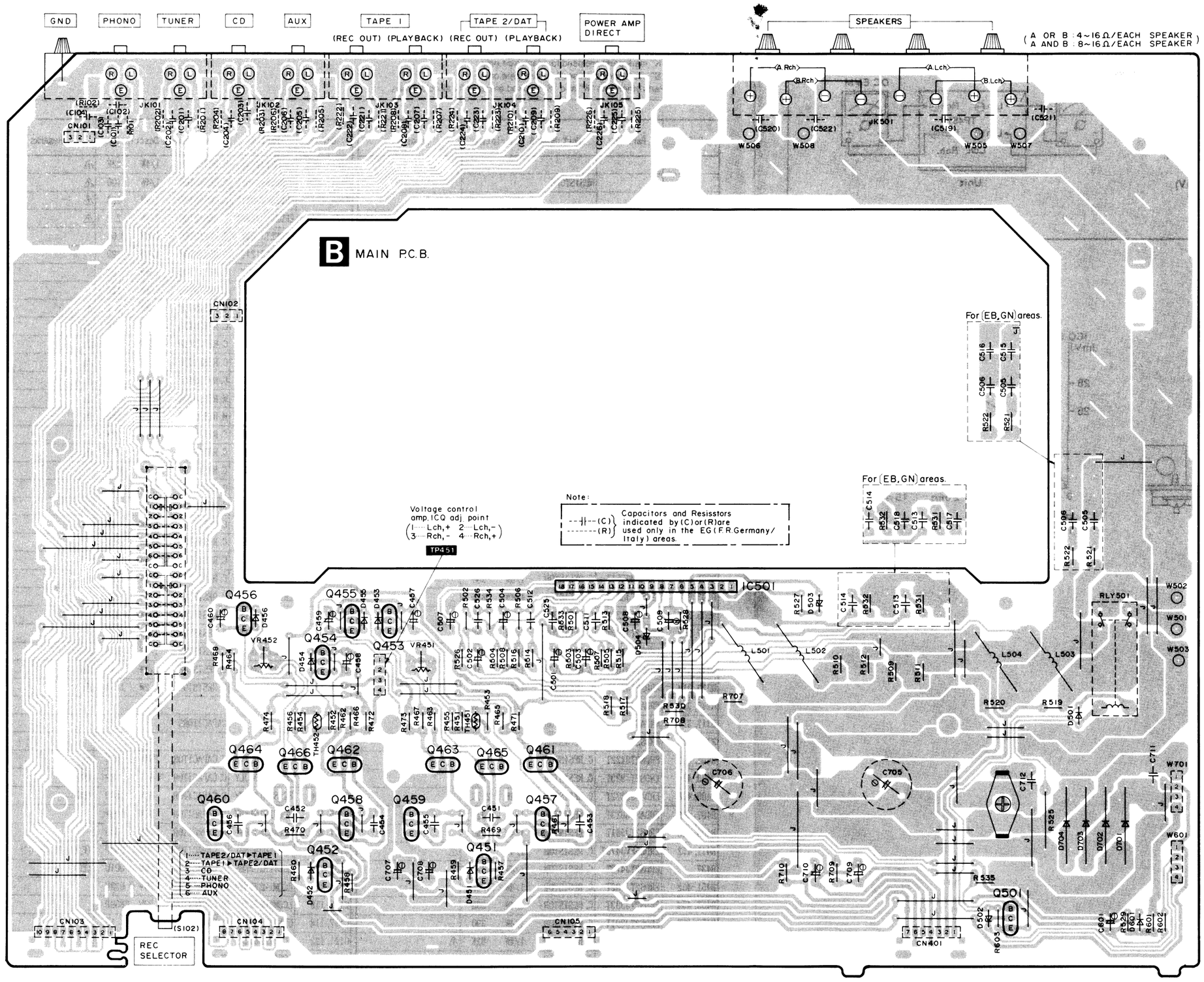
*Put a conductive mat on the work table.

*Do not touch the legs of IC or LSI with the fingers directly.

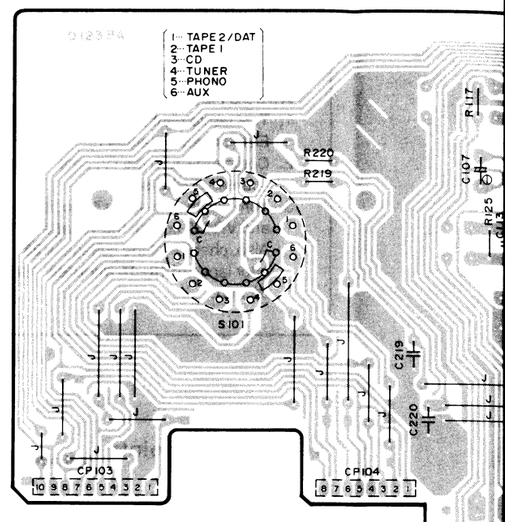
■ WIRING CONNECTION DIAGRAM



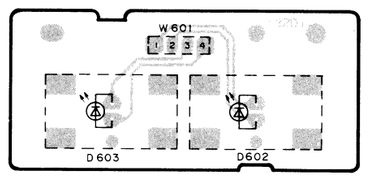
■ PRINTED CIRCUIT BOARDS (Parts list on page 18~21)



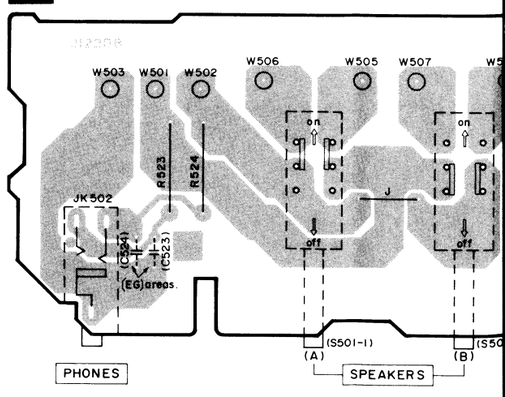
A PHONO EQ/TONE AMP P.C.B.



F LED P.C.B



D HEADPHONES/SPEAKER SWITCH P.C.B.



5 6 7 8 9 10 11 12 13 14 15

SPEAKERS

(A OR B : 4~16Ω/EACH SPEAKER
(A AND B : 8~16Ω/EACH SPEAKER

(A Rch) (B Rch) (A Lch) (B Lch)

W506 W508 W505 W507

(C520) (C522) (C519) (C521)

JK501

R225

For (EB, GN) areas.

C516 C515 C506 C508 R522 R521

For (EB, GN) areas.

C514 C518 C513 C517 R532 R531

apacitors and Resisstors
dicated by (C) or (R) are
sed only in the EG (F.R.Germany/
aly) areas.

IC501

C509 R528 R527 D503 C514 R532 C513 R531 C506 C505 R522 R521

L501 L502 L504 L503

R510 R512 R509 R511

R707 R530 R708

R520 R519 D501

RLY501

W502 W501 W503

C706 C705 C712 C711 W701

R525 D704 D703 D702 D701 W601

R710 C710 R709 C709 R535 Q501

D502 R603 C601 R536 D601 R601 R602

CN401

-12-

A PHONO EQ/TONE AMP P.C.B.

INPUT SELECTOR

1 TAPE 2/DAT
2 TAPE 1
3 CD
4 TUNER
5 PHONO
6 AUX

S101

IC101

(VOLUME POINT IND.)

D604

W101 W102

POWER AMP DIRECT

Q402

S302

CP201

CP103 CP104 CP105 CP401

S103-2 S103-3

VR202

(S301)

MODE LOUDNESS TONE CONTROL BALANCE TREBLE

C VOLUME P.C.B

CN201

TH202

VR201-1 VR201-2 VR201-3 VR201-4

TH201

VOLUME

F LED P.C.B

W601

D603 D602

(Current drive Ind.) (Voltage control Ind.)

D HEADPHONES/SPEAKER SWITCH P.C.B.

W503 W501 W502 W506 W505 W507 W508

JK502

(S501-1) (S501-2)

(A) (B)

PHONES SPEAKERS

E POWER SWITCH P.C.B.

F1 T1.6A (EB,GN)
F1 T2.5A (E,EE)

(S1)

POWER

W701

T1
(Power transformer)

G AC IN

AC IN

220V (E,
240V (EB
50/60

JK1

W1

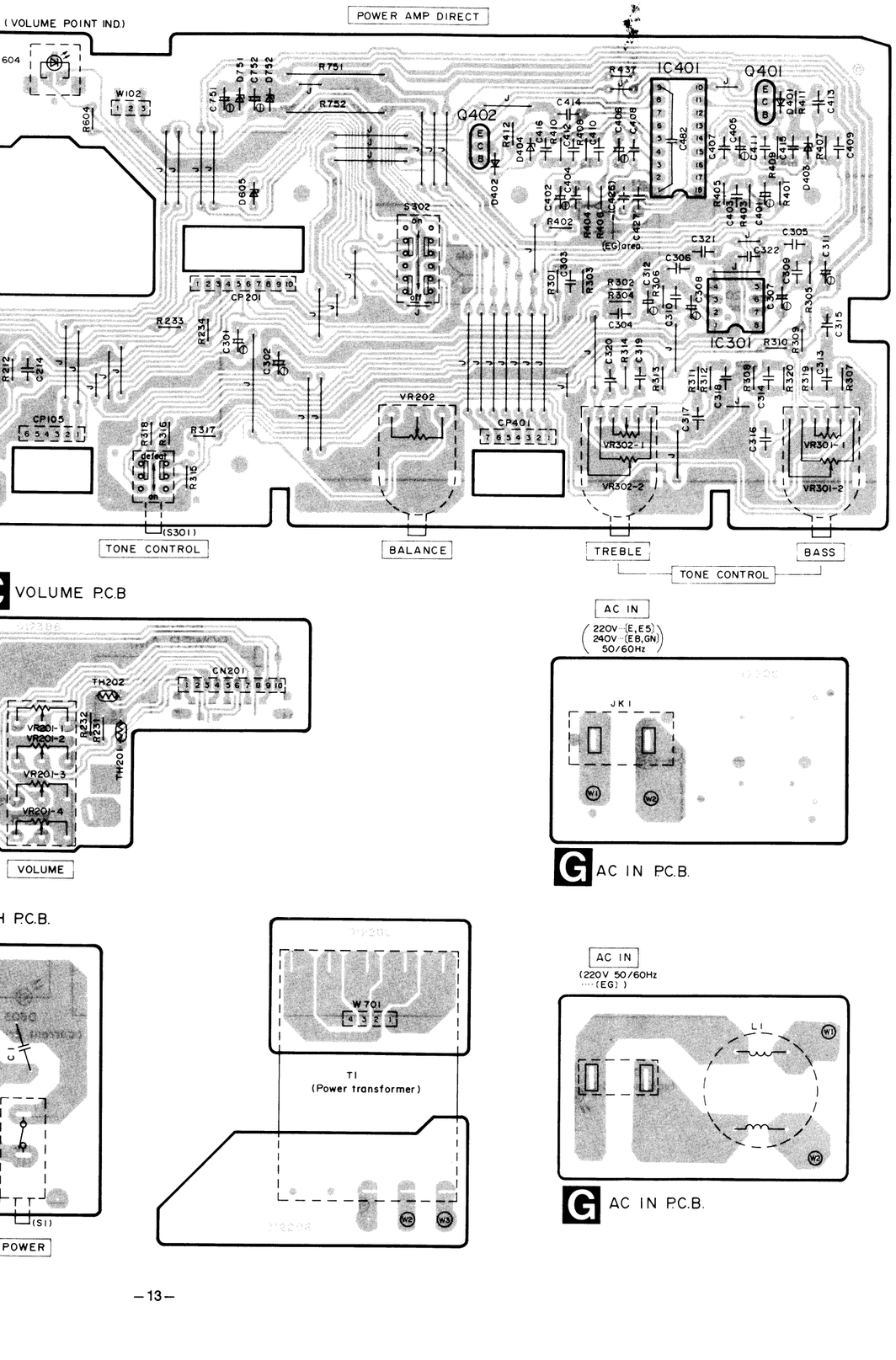
AC IN

(220V 50/6
(EG))

G AC

-13-

12 13 14 15 16 17 18 19 20 21 22



VOLUME P.C.B

H P.C.B.

AC IN
(220V ···(E,E5)
240V ···(EB,GN)
50/60Hz

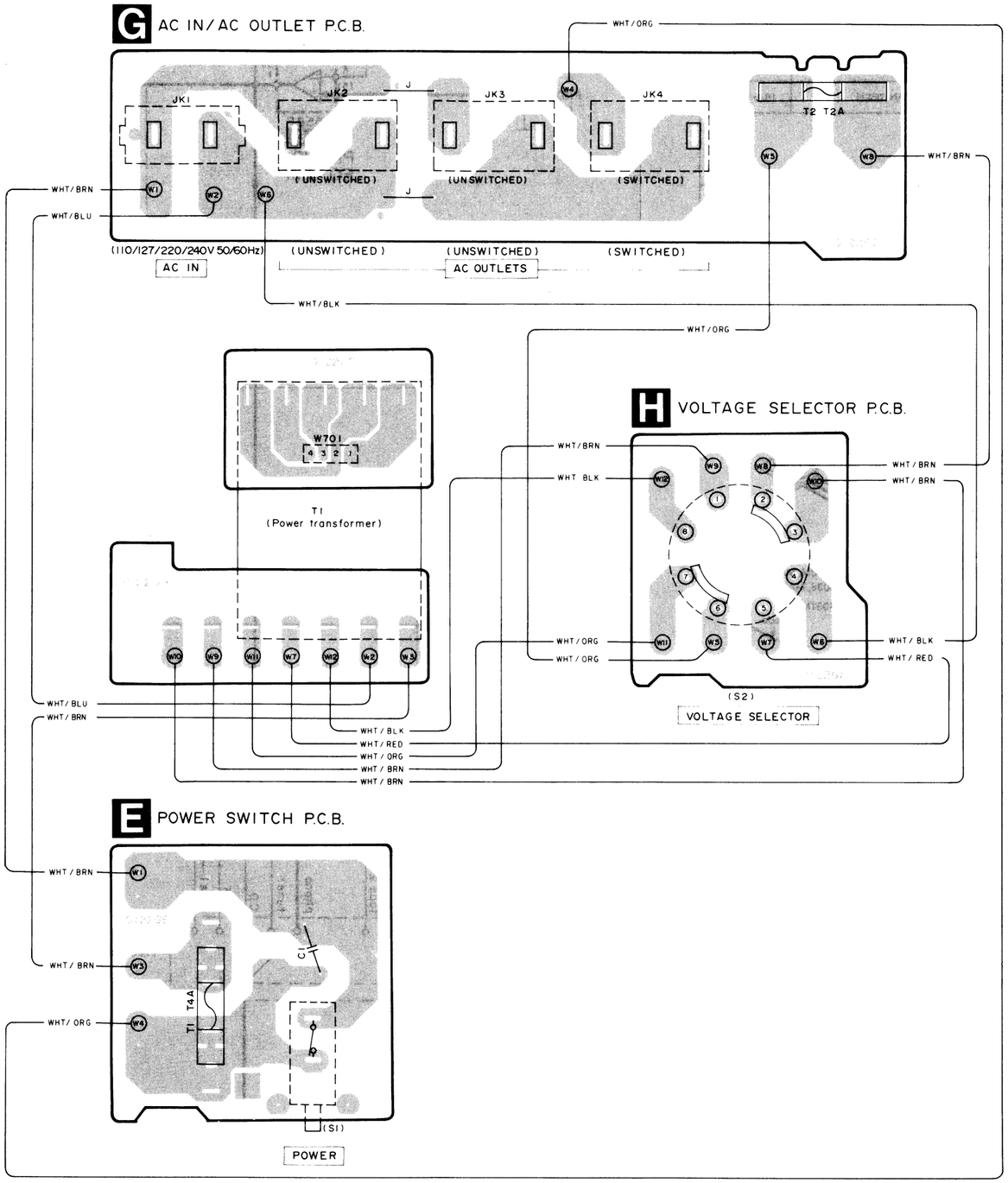
G AC IN P.C.B.

AC IN
(220V 50/60Hz
····(EG))

G AC IN P.C.B.

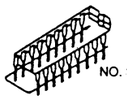
Power Source For (GC)area.

G AC IN/AC OUTLET P.C.B.

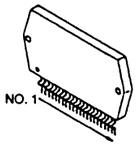


■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

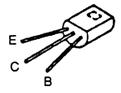
AN6558F	8 pin
UPC4570C	8 pin
AN7062N	18 pin



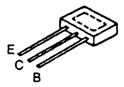
SVI3205 18 pin



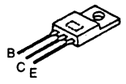
2SA1123, 2SC1685
2SC2631, 2SA992



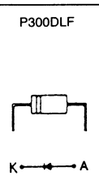
2SC3311, 2SA1309



2SC3944, 2SA1535

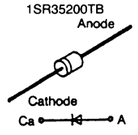


P300DLF

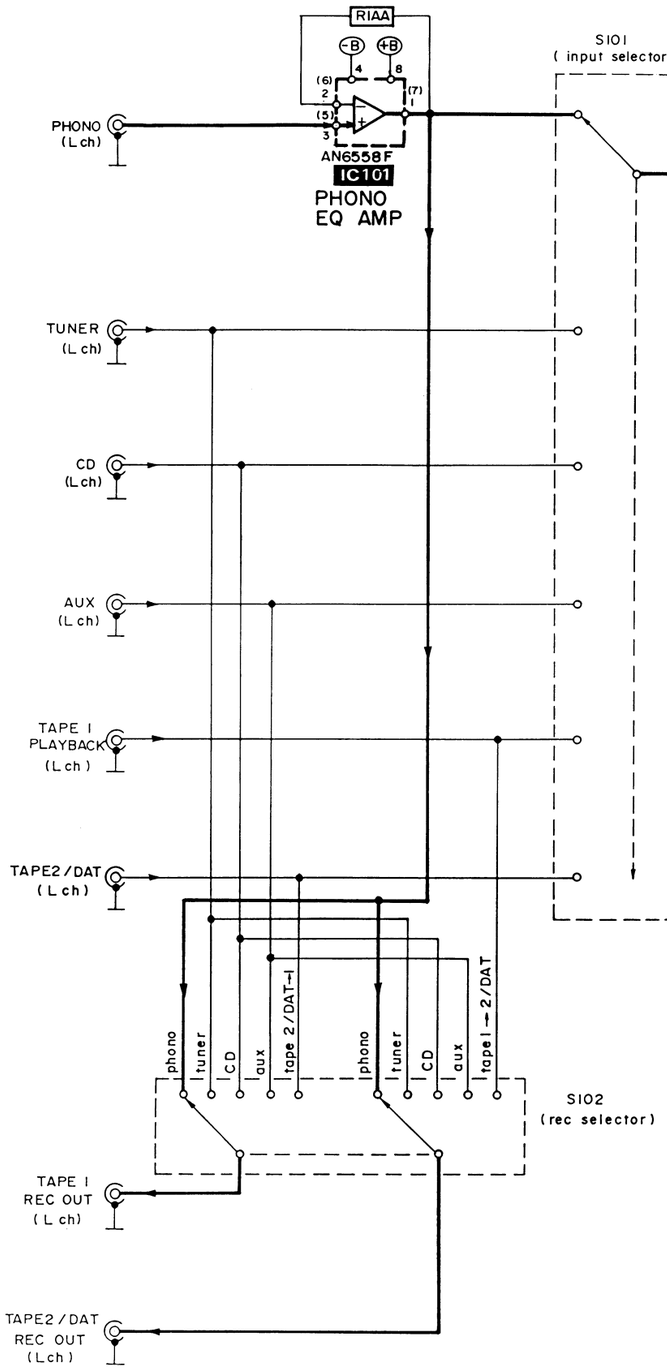


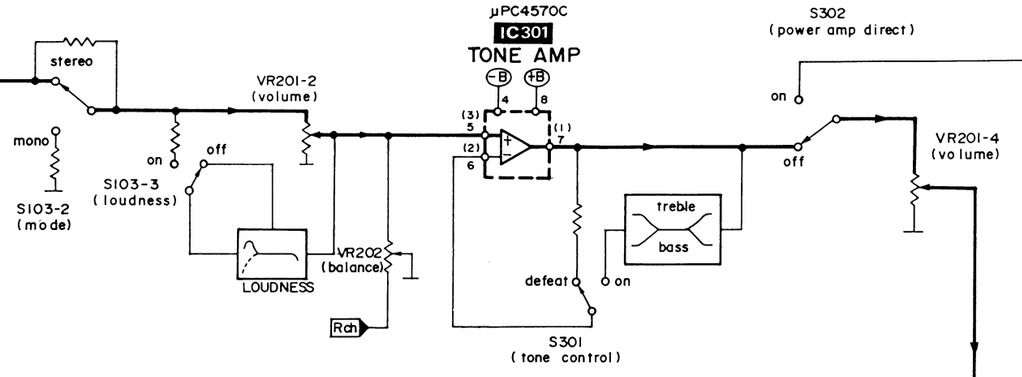
MA4160M, MA4033
MA4036, MA4180
MA4051M

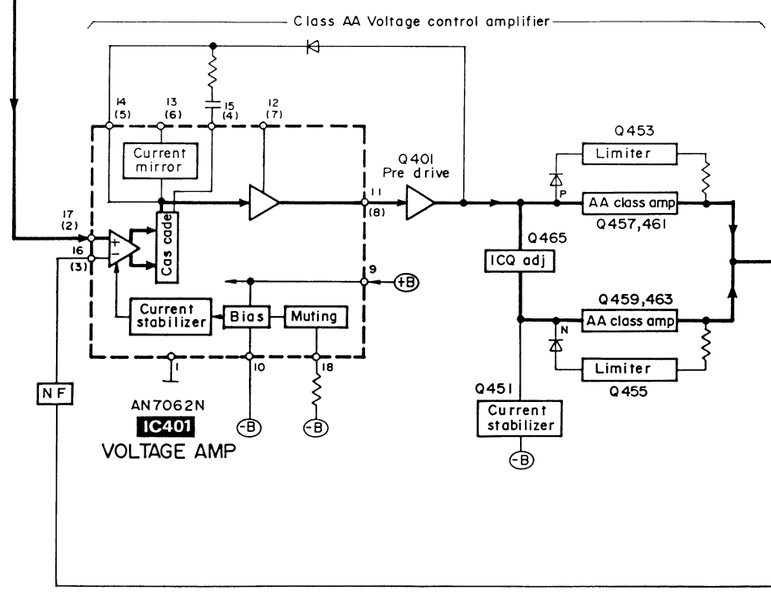
MA167, MA165
MA29WA
1SR35200TB

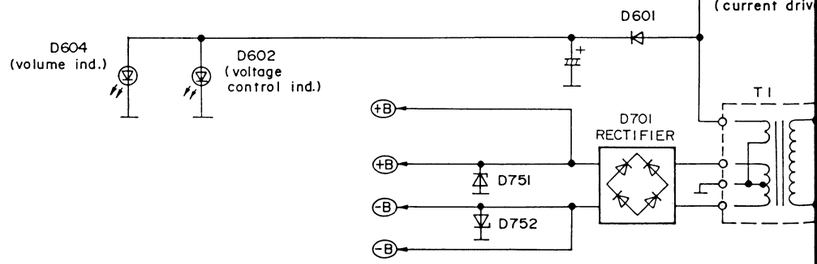


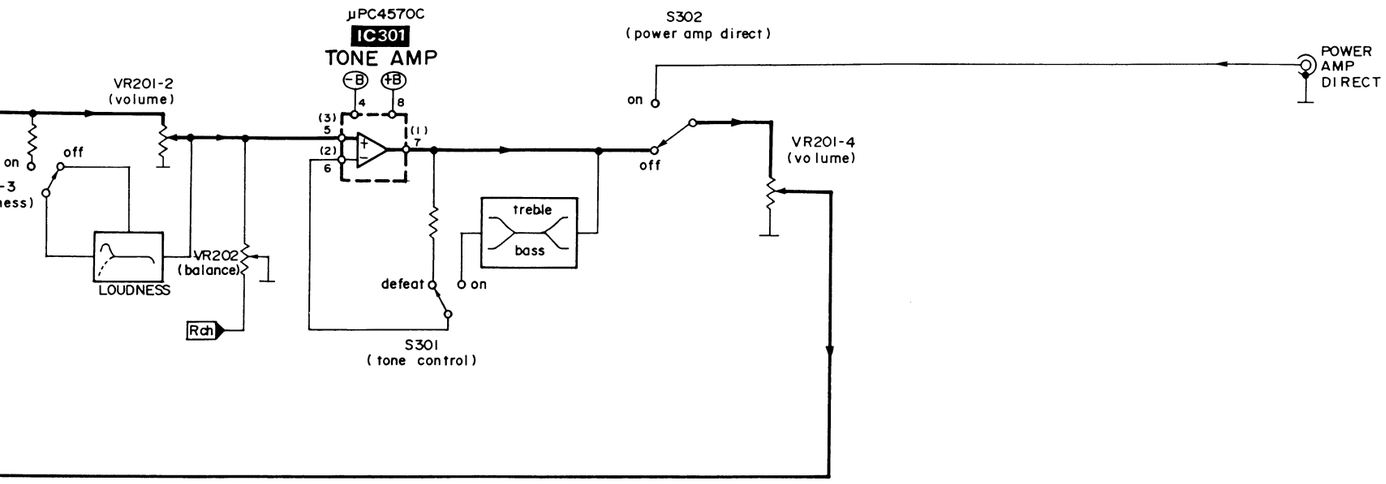
■ BLOCK DIAGRAM

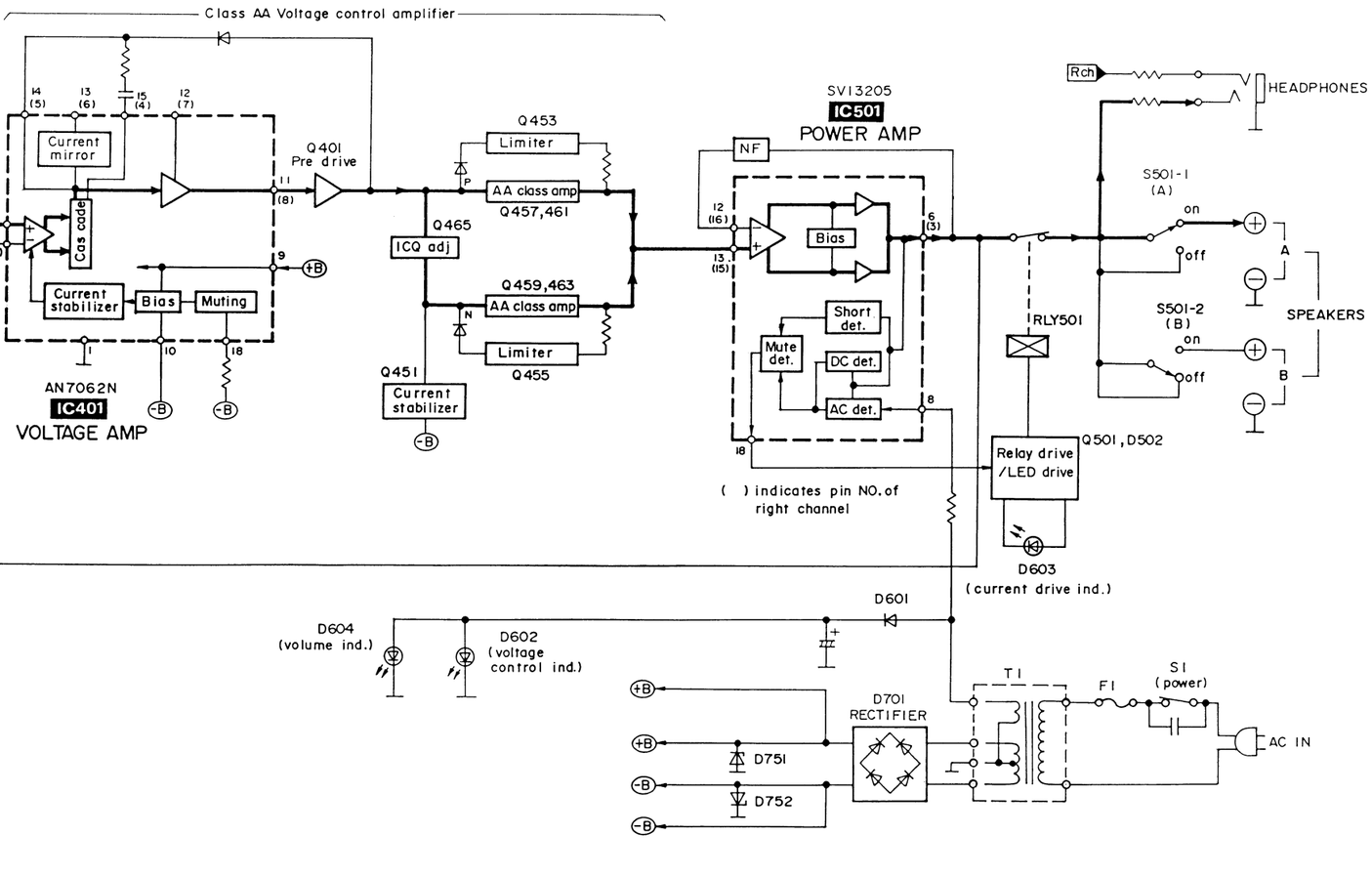












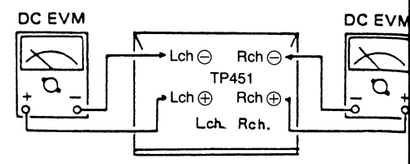
■ MEASUREMENTS AND ADJUSTMENTS

Control positions and equipment used.

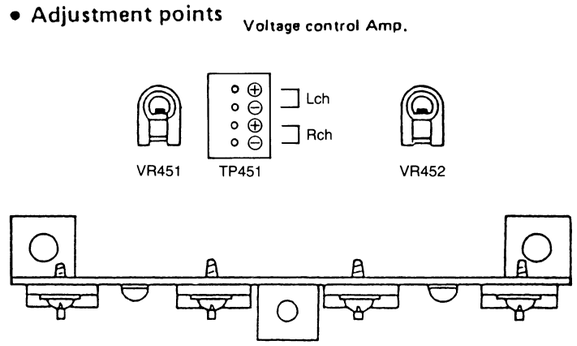
- Volume knob ..... ∞ (Minimum)
- Main speaker selector ..... off
- Balance knob 0
- DC electronic voltmeter (EVM)

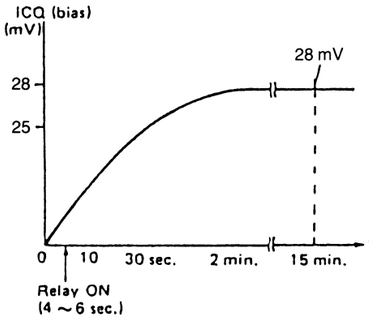
VOLTAGE CONTROL (V) AMP. IDLING (ICQ) ADJUSTMENT

1. Test equipment connection is shown in figure. (Connect the DC EVM on both channels.)
2. Completely turn the (V) amp. adjusting volumes (**VR451, VR452**) counter-clockwise.
3. Turn ON the set when it is cold, and 15 sec. later, adjust **VR451** and **VR452** so that the voltage is **25 mV**.
   Also, check that the voltage is **25~30 mV** (standard: **28 mV**) after lapse of **10–15 minutes**. (Below **30 mV** after lapse of **60 min.**)



- Adjustment points





■ MEASUREMENTS AND ADJUSTMENTS

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- Main speaker selector ..... off
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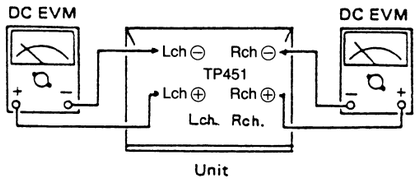
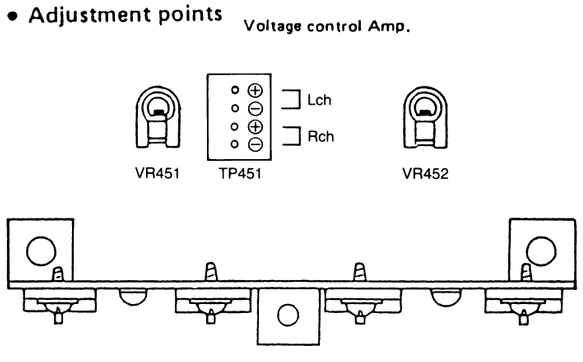
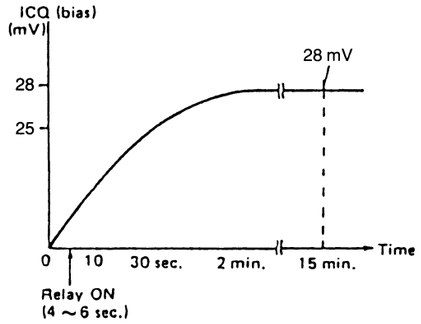


• Adjustment points





■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the first page for area.)
Parts without these indications can be used for all areas.
*"K" mark parts are used for black type only.
*"S" mark parts are used for silver type only.
Parts other than "K" and "S" marked are used for all color types.

Ref. No.	Part No.	Part Name & Description	Remarks
		RESISTORS	
R101, 102	ERDS2TJ471T	C. RESISTOR 1/4W 1K	(EG)
R105, 106	ERDS2TJ224T	C. RESISTOR 1/4W 220K	
R109, 110	ERDS2TJ391T	C. RESISTOR 1/4W 390	
R113, 114	ERDS2TJ563T	C. RESISTOR 1/4W 56K	
R117, 118	ERDS2TJ271T	C. RESISTOR 1/4W 270	
R123, 124	ERDS2TJ680T	C. RESISTOR 1/4W 68	
R125, 126	ERDS2TJ184T	C. RESISTOR 1/4W 180K	
R127, 128	ERDS2TJ123T	C. RESISTOR 1/4W 12K	
R129, 130	ERDS2TJ563T	C. RESISTOR 1/4W 56K	
R131, 132	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R201~210	ERDS2TJ102T	C. RESISTOR 1/4W 1K	(EG)
R211, 212	ERDAS3G223T	C. RESISTOR 1/4W 1K	
R213, 214	ERDS2TJ183T	C. RESISTOR 1/4W 18K	
R215, 216	ERDS2TJ332T	C. RESISTOR 1/4W 3.3K	
R217	ERDS2TJ824T	C. RESISTOR 1/4W 820K	
R219, 220	ERDAS3G272T	C. RESISTOR 1/4W 2.7K	
R221~224	ERDS2TJ471T	C. RESISTOR 1/4W 470	(EG)
R225, 226	ERDS2TJ102T	C. RESISTOR 1/4W 1K	(EG)
R231, 232	ERDAS3G472T	C. RESISTOR 1/4W 4.7K	
R233, 234	ERDAS3G124T	C. RESISTOR 1/4W 120K	
R301, 302	ERDAS3G561T	C. RESISTOR 1/4W 560	
R303, 304	ERDS2TJ823T	C. RESISTOR 1/4W 82K	
R305, 306	ERDS2TJ224T	C. RESISTOR 1/4W 220K	
R307, 308	ERDS2TJ392T	C. RESISTOR 1/4W 3.9K	
R309, 310	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R311, 312	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R313, 314	ERDS2TJ562T	C. RESISTOR 1/4W 5.6K	
R315, 316	ERDAS3G392T	C. RESISTOR 1/4W 3.9K	
R317, 318	ERDAS3G223T	C. RESISTOR 1/4W 22K	
R319, 320	ERDS2TJ183T	C. RESISTOR 1/4W 18K	
R401, 402	ERDS2TJ122T	C. RESISTOR 1/4W 1.2K	
R403, 404	ERDS2TJ823T	C. RESISTOR 1/4W 82K	
R405, 406	ERDAS3G272T	C. RESISTOR 1/4W 2.7K	
R407, 408	ERDAS3G823T	C. RESISTOR 1/4W 82K	
R409, 410	ERDS2TJ561T	C. RESISTOR 1/4W 560	
R411, 412	ERD25FVJ470T	C. RESISTOR 1/4W 47	⚠
R437	ERDS2TJ473T	C. RESISTOR 1/4W 47K	
R451, 452	ERDS2TJ182T	C. RESISTOR 1/4W 1.8K	
R453, 454	ERDS2TJ393T	C. RESISTOR 1/4W 39K	
R455, 456	ERDS2TJ391T	C. RESISTOR 1/4W 390	
R457, 458	ERDS2TJ823T	C. RESISTOR 1/4W 82K	⚠
R459, 460	ERD25FVJ101T	C. RESISTOR 1/4W 100	⚠
R461~464	ERDS2TJ223T	C. RESISTOR 1/4W 22K	⚠
R465~468	ERD25FVJ101T	C. RESISTOR 1/4W 100	⚠
R469, 470	ERD25FVJ821T	C. RESISTOR 1/4W 820	⚠
R471~474	ERD25FVJ2R2T	C. RESISTOR 1/4W 2.2	⚠
R501, 502	ERDS2TJ362T	C. RESISTOR 1/4W 3.6K	
R503, 504	ERDS2TJ121T	C. RESISTOR 1/4W 120	
R505, 506	ERDS2TJ392T	C. RESISTOR 1/4W 3.9K	
R507, 508	ERDS2TJ121T	C. RESISTOR 1/4W 120	
R509~512	RREEMKR10SC	C. RESISTOR 2W 0.1	⚠
R513~516	ERD25FVJ100T	C. RESISTOR 1/4W 10	⚠
R517, 518	ERD25FVJ1R0T	C. RESISTOR 1/4W 1.0	⚠
R519, 520	RREEMKR10SC	C. RESISTOR 2W 0.1	⚠
R521, 522	RREEMKR10SC	C. RESISTOR 2W 0.1	⚠
R523, 524	ERG2SJ331H	M. RESISTOR 2W 330	⚠
R525	ERG2SJ681H	M. RESISTOR 2W 680	⚠
R526	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R527	ERDS2TJ223T	C. RESISTOR 1/4W 22K	⚠
R528	ERDS2TJ824T	C. RESISTOR 1/4W 820K	
R529	ERDS2TJ124T	C. RESISTOR 1/4W 120K	
R530	ERDS1FVJ682T	C. RESISTOR 1/2W 6.8K	⚠
R531, 532	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R533, 534	ERDS2TJ182T	C. RESISTOR 1/4W 1.8K	
R535	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R601	ERDS1FVJ120T	C. RESISTOR 1/2W 12	⚠
R602	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R603	ERDS2TJ331T	C. RESISTOR 1/4W 330	
R604	ERDS2TJ271T	C. RESISTOR 1/4W 270	
R707, 708	ERD25FVJ6R8T	C. RESISTOR 1/4W 6.8	⚠
R709, 710	ERD25FVJ470T	C. RESISTOR 1/4W 47	⚠
R751, 752	ERG2ANJP152S	M. RESISTOR 2W 1.5K	⚠
		CAPACITORS	
C1	ECKWNS103ZVS	C. CAPACITOR 250V 0.01U	⚠
C101, 102	RCBS1H180JLY	C. CAPACITOR 50V 18P	(EG)
C103, 104	RCBS1H181KBY	C. CAPACITOR 50V 180P	(EG)
C105, 106	RCBS1H101KBY	C. CAPACITOR 50V 100P	
C107, 108	ECEA0JK330B	E. CAPACITOR 6.3V 33U	
C109, 110	RCBS1H391KBY	C. CAPACITOR 50V 390P	(E, E5, EB, GN, GC)
C109, 110	ECBT1H102KBS	C. CAPACITOR 50V 0.001U	(EG)
C113, 114	ECQM1H223KV3	P. CAPACITOR 50V 0.022U	
C115, 116	ECQM1H682KV3	P. CAPACITOR 50V 6800P	
C117, 118	UES1H010M1TA	E. CAPACITOR 50V 1U	
C121, 122	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C123, 124	ECEA1HPX3R3B	E. CAPACITOR 50V 3.3U	

Ref. No.	Part No.	Part Name & Description	Remarks
C201～210	RCBS1H101KBY	C. CAPACITOR 50V 100P	(EG)
C213, 214	ECQV1H563JZ3	P. CAPACITOR 50V 0.056U	
C219, 220	RCBS1H271KBY	C. CAPACITOR 50V 270P	
C221～224	RCBS1H181KBY	C. CAPACITOR 50V 180P	(EG)
C225, 226	RCBS1H101KBY	C. CAPACITOR 50V 100P	(EG)
C301, 302	ECEA1HPX3R3B	E. CAPACITOR 50V 3.3U	
C303, 304	RCBS1H101KBY	C. CAPACITOR 50V 100P	
C305, 306	RCBS1H820KBY	C. CAPACITOR 50V 82P	
C307, 308	ECEA1HPX4R7B	E. CAPACITOR 50V 4.7U	
C309, 310	RCBS1H390JLY	C. CAPACITOR 50V 39P	
C311, 312	ECEA1CPX100B	E. CAPACITOR 16V 10U	
C313, 314	ECQV1H823JZ3	P. CAPACITOR 50V 0.082U	
C315, 316	ECQM1H153KV3	P. CAPACITOR 50V 0.015U	
C317, 318	ECQM1H183KV3	P. CAPACITOR 50V 0.018U	
C319, 320	ECQM1H182KV3	P. CAPACITOR 50V 1800P	
C321, 322	ECKT1H103ZF	C. CAPACITOR 50V 0.001U	
C401, 402	ECEA1HPX3R3B	E. CAPACITOR 50V 3.3U	
C403, 404	RCBS1H271KBY	C. CAPACITOR 50V 270P	
C405, 406	ECEA1CPX220B	E. CAPACITOR 16V 22U	
C407, 408	RCBS1H820KBY	C. CAPACITOR 50V 82P	
C409, 410	RCBS1H100JLY	C. CAPACITOR 50V 10P	
C411, 412	RCBS1H681KBY	C. CAPACITOR 50V 680P	
C413, 414	ECCT2H070D	C. CAPACITOR 500V 7P	
C415, 416	ECQM1H102KV3	P. CAPACITOR 50V 1000P	
C426	ECKT1H103ZF	C. CAPACITOR 50V 0.003U	(EG)

Ref. No.	Part No.	Part Name & Description	Remarks
C427	ECKT1H2232F	C. CAPACITOR 50V 0.022U	
C451, 452	ECKT1H3332F	C. CAPACITOR 50V 0.033U	
C453～456	ECCT2H680K	C. CAPACITOR 500V 68P	⚠
C457～460	ECEA1HK010B	E. CAPACITOR 50V 1U	
C482	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C501～504	ECEA0JPX101B	E. CAPACITOR 6.3V 100U	
C505, 506	ECKT1H223ZF	C. CAPACITOR 50V 0.022U	(E, E5, EG, GC)
C505, 506	ECKT1H473ZF	C. CAPACITOR 50V 0.047U	(EB, GN)
C507	ECEA0JK101B	E. CAPACITOR 6.3V 100U	
C508	ECEA1HU470B	E. CAPACITOR 50V 47U	
C509	ECEA1HN100S	E. CAPACITOR 50V 10U	
C511, 512	RCBS1H180JLY	C. CAPACITOR 50V 18P	
C513, 514	ECKT1H223ZF	C. CAPACITOR 50V 0.022U	(E, E5, EG, GC)
C513～518	ECKT1H473ZF	C. CAPACITOR 50V 0.047U	(EB, GN)
C519～522	ECQM1H153KV3	P. CAPACITOR 50V 0.015U	(EG)
C523, 524	ECBT1H102KB5	C. CAPACITOR 50V 0.001U	(EG)
C525, 526	ECQB1H272JZ3	P. CAPACITOR 50V 2700P	
C601	ECEA1CU221B	E. CAPACITOR 16V 220U	
C705, 706	ECES1HV682UZ	E. CAPACITOR 50V 6800U	
C707～710	ECEA1JU220	E. CAPACITOR 63V 22U	
C711	ECKR2H103ZU	C. CAPACITOR 500V 0.01U	(E, E5, EB, GN, GC)
C711	ECQE2104KS	P. CAPACITOR 200V 0.1U	(EG)
C712	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C713, 714	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	(EG)
C751, 752	ECEA1EPX470B	E. CAPACITOR 25V 47U	

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUITS	
IC101	AN6558F	IC, PHONO EQ AMP.	
IC301	UPC4570C	IC, TONE AMP.	
IC401	AN7062N	IC, V AMP.	
IC501	SVI3205	IC, POWER AMP.	⚠
		TRANSISTORS	
Q401, 402	2SA1123RST	TRANSISTOR	
Q451, 452	2SC2631RST	TRANSISTOR	⚠
Q453, 454	2SC3311AQSTA	TRANSISTOR	
Q455, 456	2SA1309AQSTA	TRANSISTOR	
Q457, 458	2SC2631RST	TRANSISTOR	⚠
Q459, 460	2SA1123RST	TRANSISTOR	⚠
Q461, 462	2SC3944AQRS	TRANSISTOR	⚠
Q463, 464	2SA1535AQRS	TRANSISTOR	⚠
Q465, 466	2SC1685RST	TRANSISTOR	
Q501	2SA992EFP	TRANSISTOR	
		DIODES	
D401, 402	MA167ATA	DIODE	
D403, 404	MA4036MTA	DIODE	
D451, 452	MA29WATA	DIODE	⚠
D453～456	MA165TA	DIODE	
D501	MA165TA	DIODE	
D502	MA4051MTA	DIODE	
D503	MA4160MTA	DIODE	⚠
D504	MA4160MTA	DIODE	
D601	1SR35200TB	DIODE	⚠
D602	LN014472PH	DIODE	
D603	LN018472PH	DIODE	
D604	LN018304P	DIODE	
D605	MA4033MTA	DIODE	
D701～704	P300DLF	DIODE	⚠
D751, 752	MA4160MTA	DIODE	
		VARIABLE RESISTORS	
VR201	RRV16J01A	V. R, VOLUME CONTROL	
VR202	EWHFDA014G15	V. R, BALANCE	
VR301	EWC2XA000C15	V. R, BASS	
VR302	EWC2XA000C15	V. R, TREBLE	
VR451	EVNDXAA00B52	V. R, ICQ ADJ. (Lch)	
VR452	EVNDXAA00B52	V. R, ICQ ADJ. (Rch)	
		THERMISTOR	
TH201, 202	ERTD2ZHL104T	THERMISTOR	
TH451, 452	ERTD2ZHL104T	THERMISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
		COILS	
L1	SLQZ650MH49	COIL	⚠(EG)
L501～504	SLQY18G-10	COIL	
		TRANSFORMERS	
T1	RTP1N5E001-W	POWER TRANSFORMER	⚠(E, E5, EG)
T1	RTP1N5B002-W	POWER TRANSFORMER	⚠(EB, GN, GC)
		FUSES	
F1	XBA2C20TB0	FUSE 250V T2.0A	⚠(E, E5, EG)
F1	XBA2C16TB0	FUSE 250V T1.6A	⚠(EB, GN)
F1	XBA2C40TB0	FUSE 250V T4.0A	⚠(GC)
F2	XBA2C20TB0	FUSE 250V T2.0A	⚠(GC)
		SWITCHES	
S1	ESB8249V	POWER	⚠
S2	ESE37263	VOLTAGE SELECTOR	⚠(GC)
S101	RSR6B001	INPUT SELECTOR	
S102	RSS6D001	REC SELECTOR	
S103	ESB68108	MODE/LOUDNESS	
S301	ESB68107	TONE CONTROL	
S302	ESB68109	POWER AMP DIRECT	
S501	RSP2002	SPEAKER SELECTOR	
		JACKS	
CN101, 102	SJT3319	CONNECTOR(3P)	
CN103	SJS51080WL	SOCKET(10P)	
CN104	SJS50880WL	SOCKET(8P)	
CN105	SJS50680WL	SOCKET(6P)	
CN201	SJS51080WL	SOCKET(10P)	
CN401	SJS50780WL	SOCKET(7P)	
CP103	SJT31047WL	CONNECTOR(10P)	
CP104	SJT30847WL	CONNECTOR(8P)	
CP105	SJT30647WL	CONNECTOR(6P)	
CP201	SJT31047WL	CONNECTOR(10P)	
CP401	SJT30747WL	CONNECTOR(7P)	
JK1	SJS9231-1B	AC INLET	⚠(E, E5, EG, EB, GC)
JK1	SJS9234B	AC INLET	⚠(GN)
JK2～4	SJS9233B	AC OUTLET	⚠(GC)
JK101	SJF3067NJ	TERMINAL, PHONO/TUNER	
JK102～104	SJF3069N	TERMINAL, CD/AUX/TAPE1/TAPE2	
JK105	SJF3068NJ	TERMINAL, POWER AMP DIRECT	
JK501	SJF4819	TERMINAL, SPEAKER	
JK502	SJJD19	HEADPHONES JACK	

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUITS	
IC101	AN6558F	IC, PHONO EQ AMP.	
IC301	UPC4570C	IC, TONE AMP.	
IC401	AN7062N	IC, V AMP.	
IC501	SVI3205	IC, POWER AMP.	⚠
		TRANSISTORS	
Q401, 402	2SA1123RST	TRANSISTOR	
Q451, 452	2SC2631RST	TRANSISTOR	⚠
Q453, 454	2SC3311AQSTA	TRANSISTOR	
Q455, 456	2SA1309AQSTA	TRANSISTOR	
Q457, 458	2SC2631RST	TRANSISTOR	⚠
Q459, 460	2SA1123RST	TRANSISTOR	⚠
Q461, 462	2SC3944AQRS	TRANSISTOR	⚠
Q463, 464	2SA1535AQRS	TRANSISTOR	⚠
Q465, 466	2SC1685RST	TRANSISTOR	
Q501	2SA992EFP	TRANSISTOR	
		DIODES	
D401, 402	MA167ATA	DIODE	
D403, 404	MA4036MTA	DIODE	
D451, 452	MA29WATA	DIODE	⚠
D453~456	MA165TA	DIODE	
D501	MA165TA	DIODE	
D502	MA4051MTA	DIODE	
D503	MA4160MTA	DIODE	⚠
D504	MA4160MTA	DIODE	
D601	1SR35200TB	DIODE	⚠
D602	LN014472PH	DIODE	
D603	LN018472PH	DIODE	
D604	LN018304P	DIODE	
D605	MA4033MTA	DIODE	
D701~704	P300DLF	DIODE	⚠
D751, 752	MA4160MTA	DIODE	
		VARIABLE RESISTORS	
VR201	RRV16J01A	V. R, VOLUME CONTROL	
VR202	EWHFDA014G15	V. R, BALANCE	
VR301	EWC2XA000C15	V. R, BASS	
VR302	EWC2XA000C15	V. R, TREBLE	
VR451	EVNDXAA00B52	V. R, ICQ ADJ. (Lch)	
VR452	EVNDXAA00B52	V. R, ICQ ADJ. (Rch)	
		THERMISTOR	
TH201, 202	ERTD2ZHL104T	THERMISTOR	
TH451, 452	ERTD2ZHL104T	THERMISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
		COILS	
L1	SLQZ650MH49	COIL	⚠(EG)
L501~504	SLQY18G-10	COIL	
		TRANSFORMERS	
T1	RTP1N5E001-W	POWER TRANSFORMER	⚠(E, E5, EG)
T1	RTP1N5B002-W	POWER TRANSFORMER	⚠(EB, GN, GC)
		FUSES	
F1	XBA2C20TB0	FUSE 250V T2.0A	⚠(E, E5, EG)
F1	XBA2C16TB0	FUSE 250V T1.6A	⚠(EB, GN)
F1	XBA2C40TB0	FUSE 250V T4.0A	⚠(GC)
F2	XBA2C20TB0	FUSE 250V T2.0A	⚠(GC)
		SWITCHES	
S1	ESB8249V	POWER	⚠
S2	ESE37263	VOLTAGE SELECTOR	⚠(GC)
S101	RSR6B001	INPUT SELECTOR	
S102	RSS6D001	REC SELECTOR	
S103	ESB68108	MODE/LOUDNESS	
S301	ESB68107	TONE CONTROL	
S302	ESB68109	POWER AMP DIRECT	
S501	RSP2002	SPEAKER SELECTOR	
		JACKS	
CN101, 102	SJT3319	CONNECTOR(3P)	
CN103	SJS51080WL	SOCKET(10P)	
CN104	SJS50880WL	SOCKET(8P)	
CN105	SJS50680WL	SOCKET(6P)	
CN201	SJS51080WL	SOCKET(10P)	
CN401	SJS50780WL	SOCKET(7P)	
CP103	SJT31047WL	CONNECTOR(10P)	
CP104	SJT30847WL	CONNECTOR(8P)	
CP105	SJT30647WL	CONNECTOR(6P)	
CP201	SJT31047WL	CONNECTOR(10P)	
CP401	SJT30747WL	CONNECTOR(7P)	
JK1	SJS9231-1B	AC INLET	⚠(E, E5, EG, EB, GC)
JK1	SJS9234B	AC INLET	⚠(GN)
JK2~4	SJS9233B	AC OUTLET	⚠(GC)
JK101	SJF3067NJ	TERMINAL, PHONO/TUNER	
JK102~104	SJF3069N	TERMINAL, CD/AUX/TAPE1/TAPE2	
JK105	SJF3068NJ	TERMINAL, POWER AMP DIRECT	
JK501	SJF4819	TERMINAL, SPEAKER	
JK502	SJJD19	HEADPHONES JACK	

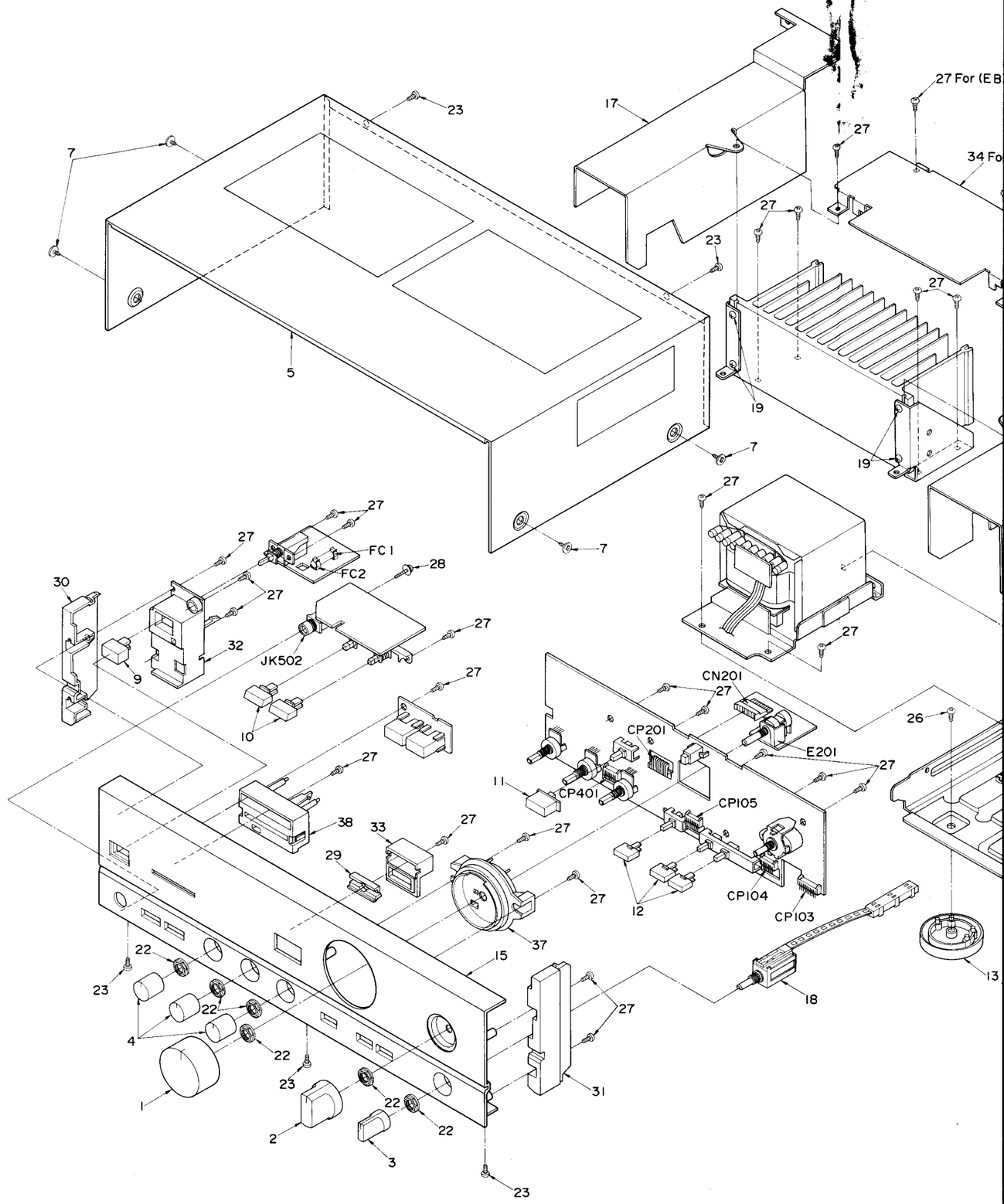
Ref. No.	Part No.	Part Name & Description	Remarks
		SHIELD COVERS	
E101	SMC1299	SHIELD COVER	
E103	RMC0033	SHIELD COVER	
E201	RSQ0007	SHIELD COVER	
		FUSE HOLDERS	
FC1, 2	SJT390	FUSE HOLDER	⚠
FC3, 4	SJT388	FUSE HOLDER	⚠(GC)

Ref. No.	Part No.	Part Name & Description	Remarks
		RELAY	
RLY501	SSY126	RELAY	⚠

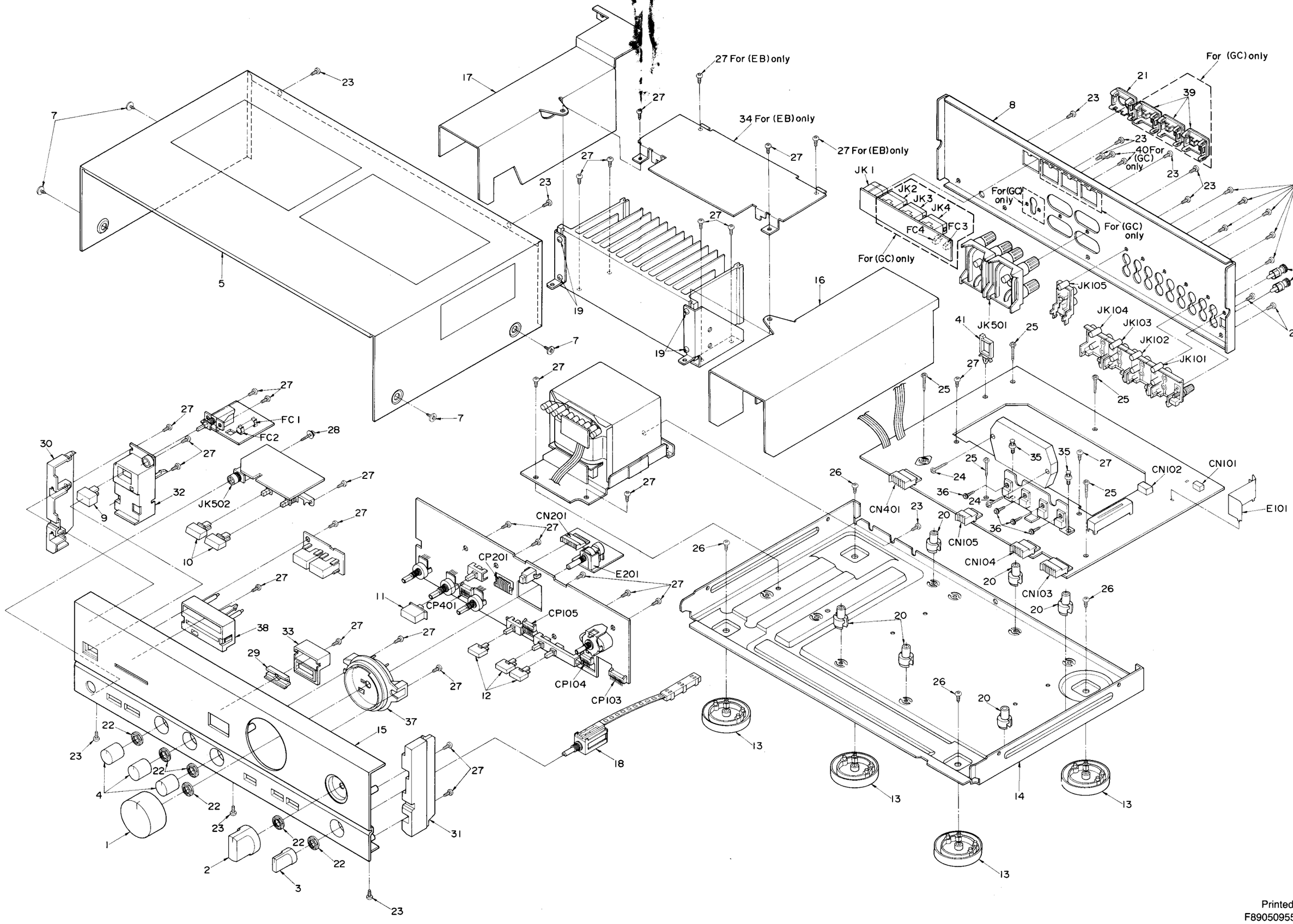
Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RGW0025-K	VOLUME KNOB	K
1	RGW0025-S	VOLUME KNOB	S
2	RGW0026-K	INPUT SELECT KNOB	K
2	RGW0026-S	INPUT SELECT KNOB	S
3	RGW0027-K	REC SELECT KNOB	K
3	RGW0027-S	REC SELECT KNOB	S
4	RGW0028-K	TONE KNOB	K
4	RGW0028-S	TONE KNOB	S
5	RKM0036A-K	CABINET	K
5	RKM0036A-S	CABINET	S
6	SJPA11-1	SHORTING PIN	
7	SNE2129-1	SCREW	K
7	SNE2129	SCREW	S
8	RGR0019A-A	REAR PANEL	(E)
8	RGR0050	REAR PANEL	(E5)
8	RGR0019A-C	REAR PANEL	(EB)
8	RGR0019A-B	REAR PANEL	(EG)
8	RGR0019B-A	REAR PANEL	(GC)
8	RGR0019A-D	REAR PANEL	(GN)
9	RGU0030	POWER BUTTON	K
9	RGU0030-S	POWER BUTTON	S
10	RGU0118-K	SPEAKER BUTTON	K
10	RGU0118-S	SPEAKER BUTTON	S
11	RGU0119-K	DIRECT BUTTON	K
11	RGU0119-S	DIRECT BUTTON	S
12	RGU0120-K	SIGNAL BUTTON	K
12	RGU0120-S	SIGNAL BUTTON	S
13	RKA0009-1	FOOT	
14	RMK0035	CHASSIS	
15	RYP0104-K	FRONT PANEL	K
15	RYP0105-S	FRONT PANEL	S
16	RSC0057	SHIELD PLATE (R)	
17	RSC0058	SHIELD PLATE (L)	
18	RSQ0004	REC SELECTOR	
19	XTB3+8J	SCREW	
20	SHE187-2	HOLDER	
21	SJS9231A	AC INLET COVER	(E. E5. EB. EG. GC. GW)
21	SJS9234A	AC INLET COVER	(GN)
22	SNE4021-1	NUT	
23	XTBS3+8JFZ1	SCREW	
24	XTB3+16JFZ	SCREW	
25	XTB3+20J	SCREW	
26	XTB3+6J	SCREW	
27	XTB3+8JFZ	SCREW	
28	XTWS3+8T	SCREW	
29	RGK0097	ORNAMENT(GOLD LINE)	
30	RGK0098-K	SIDE ORNAMENT (L)	K
30	RGK0098-S	SIDE ORNAMENT (L)	S
31	RGK0099-K	SIDE ORNAMENT (R)	K

Ref. No.	Part No.	Part Name & Description	Remarks
31	RGK0099-S	SIDE ORNAMENT (R)	S
32	RMR0136-K	HOLDER	K
32	RMR0136-S	HOLDER	S
33	RMR0137-K	HOLDER	K
33	RMR0137-S	HOLDER	S
34	RMQ0069	HEAT SINK COVER	(EB)
35	SHR415	LATCH	
36	XTW3+8T	SCREW	
37	RGK0154-K	VOLUME ORNAMENT	K
37	RGK0155-S	VOLUME ORNAMENT	S
38	RGK0156-K	INDICATOR ORNAMENT	K
38	RGK0157-S	INDICATOR ORNAMENT	S
39	SJS9233A	AC OUTLET COVER	(GC)
40	XYN3+C6FZ	SCREW	(GC)
41	SHR301	CLAMPER	
		PACKING MATERIAL	
P1	RPG0168	CARTON BOX	K
P1	RPG0166	CARTON BOX	S
P2	SPS5185	PAD	
P3	SPS5255-1	PAD	
P4	SPS5256-1	PAD	
P5	XZB60X60A01	PROTECTION COVER	
		ACCESSORIES	
A1	RQF0170	INSTRUCTIONS MANUAL	(E. E5)
A1	RQF0172	INSTRUCTIONS MANUAL	(EB)
A1	RQF0171	INSTRUCTIONS MANUAL	(EG)
A1	RQF0173	INSTRUCTIONS MANUAL	(GC)
A1	RQF0174	INSTRUCTIONS MANUAL	(GN)
A2	SFDAC05E03	POWER CORD	⚠(E. E5. EG)
A2	SJA193	POWER CORD	⚠(EB)
A2	RJA0004	POWER CORD	⚠(GC)
A2	SJA173	POWER CORD	⚠(GN)
A3	SJP9215	AC PLUG ADAPTOR	⚠(GC)

■ EXPLODED VIEW



■ EXPLODED VIEW



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